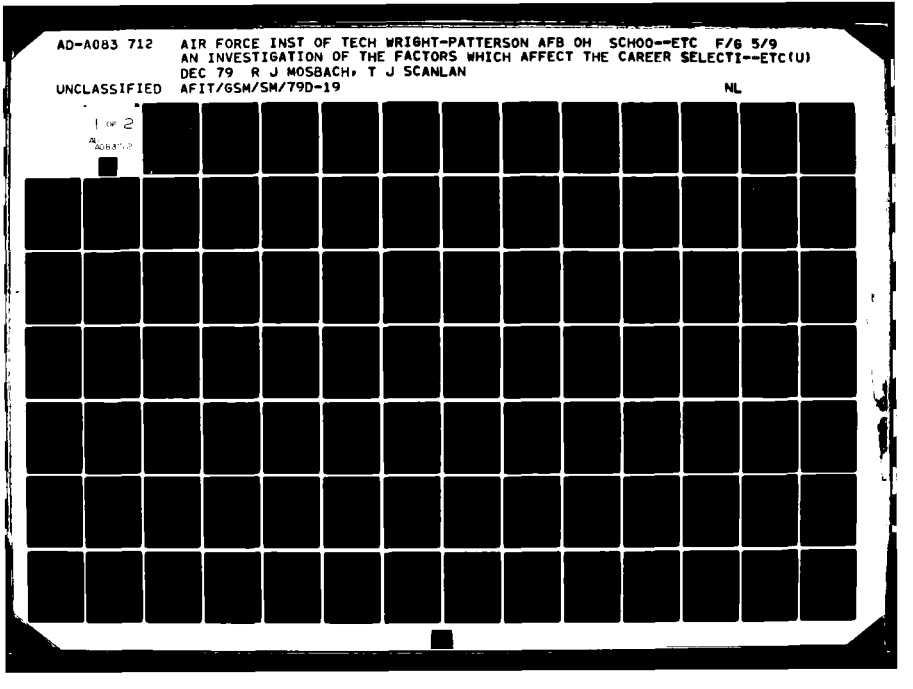
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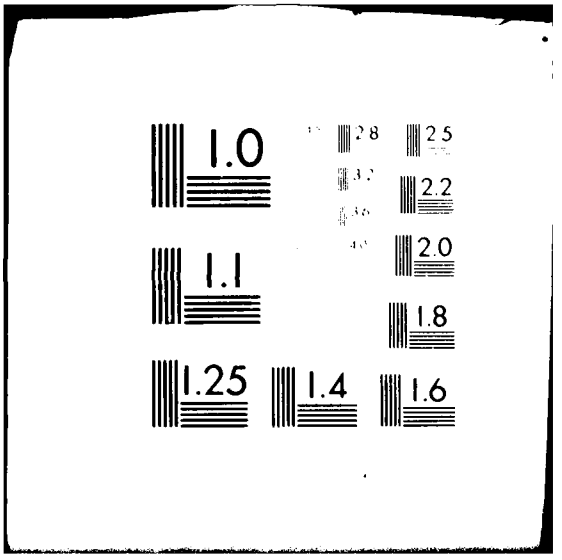
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LEVEL II

(1)

Master's thesis

(6) AN INVESTIGATION OF THE FACTORS WHICH AFFECT THE CAREER SELECTION PROCESS OF AIR FORCE SYSTEMS COMMAND COMPANY GRADE OFFICERS.

Thesis

(10) Richard J. Mosbach Major USAF
Thomas J. Scanlan Captain USAF

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AN INVESTIGATION OF THE FACTORS WHICH AFFECT THE CAREER SELECTION PROCESS OF AIR FORCE SYSTEMS COMMAND COMPANY GRADE OFFICERS

THESIS

Presented to the Faculty of the School of Engineering
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science

by

Richard J. Mosbach
Major USAF

Thomas J. Scanlan Jr.
Captain USAF

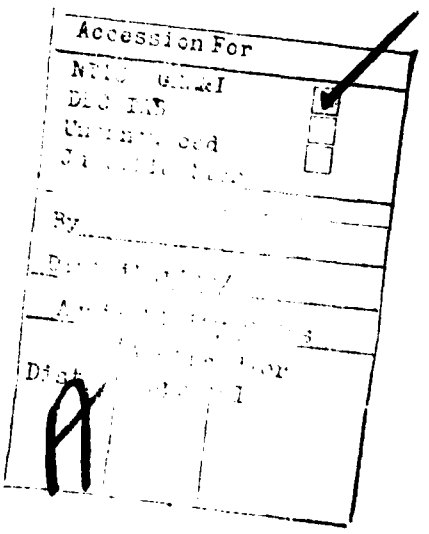
Graduate Systems Management

December 1979

Preface

This research was performed to provide useful information to senior Air Force managers regarding the current career attitudes of company grade officers. We hope that results of this study will provide a basis for responsive personnel policies which justify the time expended and interest displayed by the 2200 officers who voluntarily participated in the survey.

We express our gratitude to Dr. Michael Stahl, our thesis advisor, who provided guidance and encouragement throughout this project. We are also indebted to Dr. Charles McNichols for his valuable help in the statistical analysis and use of computer resources. A special thanks also to Capt. James Owendoff and all the members of the Air Force Systems Command Company Grade Officers Councils who assisted in distributing and collecting the questionnaires.



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Abstract

The general purpose of this study was to identify and analyze the individual perceptions and attitudes which affect the career selection decision of Air Force Systems Command company grade officers. Building on a model previously developed by Captain Logan M. Lewis using Victor Vroom's (1964) Expectancy Theory, this research included a literature review of recent work in the area of career turnover. The review identified two major theoretical developments which were postulated to add significant predictive power to Lewis' approach:

1) The effect of a person's motivation to comply with the expectations of others and

2) The effect of a person's current job satisfaction.

The specific purpose ~~of this thesis~~ was to operationalize the aforementioned concepts in a single model which explained the most variance in individual career intentions. This was accomplished in the form of a survey ~~which~~ was completed by 2200 company grade officers throughout Systems Command.

The results of the data analyses showed that a model which addressed not only the perceived attraction of job alternatives, but also the effects of the expectations of others, and current job satisfaction more accurately described an individual's career selection decision. Additional analysis of the different factors identified as being associated with

career decisions indicated:

1) Family opinion, particularly that of the spouse, is of major importance to the career selection decision, especially during the first six years of an individual's career.

2) Job challenge is particularly important to officers from commissioning to about five years. At that point, utilization of training and abilities becomes the dominant factor

3) Enforcement of standards has a strong negative association during the years immediately preceding career decision points prior to promotion to Captain and promotion to Major.

4) High salary and the 20-year retirement were not particularly significant, but the concern expressed by the majority of respondents who made comments indicated this could change depending on Presidential and Congressional actions in these areas.

5) The "up or out" policy had no practical association with career decisions of the total sample.

AN INVESTIGATION OF THE FACTORS WHICH AFFECT THE CAREER SELECTION PROCESS OF AIR FORCE SYSTEMS COMMAND COMPANY GRADE OFFICERS

I. Introduction and Research Objectives

Background

> People are important----more important than ever before. As the Air Force and the other military services begin experiencing recruiting and retention problems, it's possible that people may become the weakest link in our readiness chain (Iosue, 1979, p. 2).

Statements such as this, made by Lt. Gen. Iosue, USAF Deputy Chief of Staff, Manpower and Personnel, highlight an already serious and growing problem. Military enlistment figures for the last three months of 1978 indicate that for the first time since the advent of the all-volunteer force in 1972, all four of the services were unable to meet their recruiting goals. In fact, during this last quarter of 1978, the services successfully recruited only 90 percent of the volunteers necessary to maintain a fully manned force of two million. Further, the problems of recruiting military personnel are almost certain to become more serious as the number of military age males in the United States population drops from the current figure of 2.2 million to fewer than 1.8 million in 1986 ("Volunteer Army," 1979, p. 54).

The reasons behind these manpower problems have been and will continue to be debated by various segments of our society. Some will condemn the all-volunteer force concept and demand a return to the draft. Others such as USAF Chief of Staff Gen. Lew Allen Jr. see the problem at least partially caused by a growing "uncertainty among our people about the acceptability of an Air Force career and the commitment of the Nation to a quality volunteer force" (Allen, 1979, p. 3).

Whatever the reasons, the reality of enlistment numbers has produced a situation in which the Armed Forces of the United States must re-evaluate their attitudes and the policies which affect the attraction and retention of personnel. Most recent Air Force interest in this area has been focused on the loss of experienced pilots to the civilian airlines. It has become apparent, however, that other portions of the USAF officer population are experiencing similar retention problems. USAF Chief of Staff Gen. Lew Allen Jr. expressed his concern in remarks to the Arizona Newspaper Convention on 19 January 1979. He stated:

> We are also beginning to lose more good, experienced people in critical skill areas, many of whom are impossible to replace in the short term. We have heard a lot lately about pilots . . . but engineering and scientific specialties---the storehouse of our technical expertise---and many other specialties are also being affected. The signs of a retention problem are clear and troubling (p. 2).

The obvious questions are: Why are these officers leaving the Air Force; specifically, which of their goals and expectations do they feel will remain unsatisfied in the Air Force, yet be fulfilled in civilian life? Lewis (1978) cited

numerous studies of retention and turnover in the USAF which provide some insight into this issue. These studies, however, approached the subject from a model-seeking standpoint rather than beginning with a preconceived theoretical model.

Noting the problems associated with the model-seeking approach, Lewis (1978) utilized the conceptual framework provided by Victor H. Vroom's (1964) Expectancy Theory to examine the problem. Specifically, Lewis (1978) analyzed retention/turnover data collected from 617 officers who were serving their initial tour of duty in the Air Force as scientists and engineers. This research effort produced some of the strongest correlations to date between respondent-stated career intent and career intent predicted by Vroom's model (see Table I in Chapter II). Additionally, Lewis' research had good success in using Vroom's theory to determine the factors which contribute most strongly to an individual's career decision.

While the results presented by Lewis (1978) demonstrate the utility of Expectancy Theory, analysis of those data and subsequent research into retention issues indicate that further investigation is warranted. Specifically, Parker and Dyer (1976) and Mitchell and Albright (1972) indicated that an individual involved in a career decision is often strongly affected by what individuals in his environment "expect" him to do. This external pressure is especially strong when received from a spouse or other persons with whom a strong emotional link has been forged. Fishbein (1965) suggests that the motivation to comply with other's expectations must be

evaluated as a variable distinct from the outcomes addressed by Expectancy Theory.

In addition to the above mentioned extension of the Lewis (1978) research, this investigation uses a population that was expanded to include all company grade officers in Air Force Systems Command (AFSC). The unique nature of this research population provides an opportunity to study the importance of the various factors which affect career intent as decision points approach and pass. Specifically, the population contains members who can be identified as having from one to seven years until a career decision point and others who are currently making career decisions. By operationalizing a decision model proposed by Mobley, Griffeth, Hand and Meglino (1979), the changing weights of the career intent factors are analyzed.

Problem Statement

Air Force Systems Command is experiencing considerable difficulty retaining its company grade officers (second lieutenant through captain). This problem is illustrated by examining one component of the company grade officer force. AFSC currently has approximately 700 vacancies in the rank of captain alone. This means that only about 81 percent of the authorized positions are filled.

Faced with this dilemma, Dr. Bernard A. Kulp, Chief Scientist, Director of Science and Technology, Air Force Systems Command, requested that research be accomplished to

"analyze the attitudes and reasons for career selection/ retention problems for the entire company grade population of AFSC" (see Appendix A). This research effort accomplishes that analysis.

Objectives

Primary.

1. Determine the career intent of AFSC company grade officers using Vroom's (1964) Expectancy Theory. This analysis compares predicted career intent with respondent-stated career intent to determine the power of Vroom's model.

2. Determine the effects that persons, who possess a strong emotional link to an individual, have on the individual's career decision using Fishbein's (1965) external pressure term with Vroom's (1964) Expectancy Theory.

3. Determine whether the importance of factors which influence career intent decisions change as the individual's career progresses. This analysis is accomplished by operationalizing the conceptual model of the employee turnover process that was presented by Mobley, Griffeth, Hand and Meglino (1979).

4. Identify, through the use of Vroom's (1964) Expectancy Theory, the factors that are most closely related to the retention and turnover of AFSC company grade officers.

Secondary.

1. Determine the optimum number of outcomes to be used in Expectancy Theory analysis.

2. Determine the utility and optimum form of the expectancy term that is described by and used in Vroom's (1964) Expectancy Theory.

Limitations

The population for this research effort consisted of all company grade officers in the Air Force Systems Command. The large number and the wide geographical dispersion of subjects, along with time and funding constraints, dictated that a mailed survey be used. This method, while reliable, does impose limitations. These restrictions include: 1) survey length; 2) lack of closely controlled survey distribution and administration; and 3) inability to insure that the survey content is interpreted as the authors intended. Specifics concerning these limitations and survey design are addressed in Chapter III.

Vroom's (1964) Expectancy Theory model provides the basis for the entire research effort. Limitations and other assumptions implicit to this choice model are addressed in Chapter II.

Thesis Overview

Basic to the understanding of any research effort is a knowledge of both related research that has been completed and of the key theories and hypotheses underlying the current effort. Chapter II provides this information by summarizing the content of past career retention research and by describing the theories which are the basis of this research. Chapter III

then follows with an explanation of the research methodology that was used. This explanation includes a description of the survey, its distribution, the data preparation, and finally the data analysis. Chapter IV presents the results of the analyses and a discussion on their significance and impact. Chapter V completed the research effort by detailing the conclusions that can be drawn and by summarizing the project.

II. Theory

Synopsis of Pertinent Turnover Research

The issue of employee turnover has been a constant concern of employers in both the public and private sector. This interest is primarily due to the increased training and recruiting costs generally associated with high turnover rates. Additionally, efficiency and productivity typically suffer due to unfilled positions and the subsequent lack of continuity induced by the turnover. Due in part to the elimination of the draft, and with it a large pool of relatively cheap manpower, the military has developed an increased awareness of retention problems. Because of the high cost of pilot and other technical training, the Air Force is particularly interested in understanding the nature and causes of personnel turnover and has instituted several studies in this area. Of the recent studies accomplished concerning general retention and turnover in the Air Force (Hoiberg, Hysham and Berry, 1977; Ferris and Peters, 1976; Foley, 1976; Grace, Holoter and Soderquist, 1976; Koch and Steers, 1976; Lassiter and Proctor, 1976; Parker, 1974; Patterson, 1977; Thompson, 1975; and Vrooman, 1976), Lewis (1978) had some of the best results ($r = .84$; $p \leq .01$) using a multivariate model of career choice.

A comprehensive review of turnover research in the past 50 years by Muchinsky and Tuttle (1979) reveals that most of

these studies have compared only one set of predictors with the criterion. This bivariate modeling approach has provided mixed results. It is notable that biographical information like military service or number of older siblings has been shown to be a stronger and more consistent predictor than more complex measures used to relate variables like interests, personality, intelligence, aptitude, personal factors, or work-related factors. It has also been shown in several studies that a single predictor question concerning career intentions predicted turnover as well as more elaborate devices (Alley and Gould, 1975; Atchison and Lefferts, 1972; Kraut, 1975; Newman, 1974; Waters, Roach and Waters, 1976). In general, however, bivariate results have explained less than 20 percent of the variance in turnover and, because of their simplistic approach, provided little insight into the factors which affect the individual's turnover decision.

Recognizing this limitation, there has been a growing movement to abandon further bivariate research in favor of more refined multivariate models of individual choice behavior (Forrest, Cummings, Johnson, 1977; Lewis, 1978; Locke, 1976; Mobley, et al., 1979; Porter and Steers, 1973; Price, 1977; and Stahl, 1979). Lewis (1978) developed, in great detail, a rationale for using a model which addresses both the individual's perceptions of alternatives and his values in the decision-making process and concluded that Victor Vroom's (1964) Expectancy Theory met these requirements. His choice is supported by the fact that in recent years Expectancy Theory

TABLE I

Summary of Job Choice Related Expectancy Research

	Sample Size	Results	Level of Significance
Bartol (1976)	117	$r = .39$	.01
Lawler, Kuleck, Rhode and Sorensen (1975)	711	$\bar{r} = .4$	.01
Lewis (1978)	85	$r = .84$	.01
Mitchell and Albright (1972)	51	$r = .55$	.01
Mitchell and Knudsen (1973)	106	$r = .69$	.01
Parker and Dyer (1976)	702	$\phi = .43$	.01
Schneider (1976)	128	$r = .41$	.01
Sheard (1970)	382	$\bar{r} = .8$	.01
Sheridan, Richards and Slocum (1973)	49	$F = 29.51$	.01
Snyder, Howard and Hammer (1978)	244	$r = .47$	.001
Vroom (1966)	49	$\bar{r} = .45$	.01
Wanous (1972)	106	binomial	.028

has provided one of the most popular and successful models of decision-making, attitude formation, and motivation (Connolly, 1976; Locke, 1975; Wahba and House, 1974). Table I summarizes the results of recent empirical research using Expectancy Theory to evaluate job selection. It is notable that these studies consistently explained more variance in turnover than the bivariate models previously mentioned.

Despite Lewis' (1978) success in using Vroom's Expectancy

TABLE II

Summary of Multiple Correlation Coefficients
(adapted from Lewis, 1978, p. 87)

Criterion	Multiple R	F	Sample Size
Career Intention (Total Sample)	.65	36.65	577
Career Intention (TAFMS = 1 year)	.70	17.56	115
Career Intention (TAFMS = 2 years)	.72	27.84	138
Career Intention (TAFMS = 3 years)	.82	13.21	61
Career Intention (TAFMS = 4 years)	.84	22.34	85
Career Intention (TAFMS = 5 years)	.62	21.35	177

Model to predict career intentions of Air Force scientists and engineers in their fourth year of total active federal military service (TAFMS), the predictive power of the model drops significantly prior to and after the four-year point (see Table II). This raises possible questions with respect to Lewis' method of operationalizing the model (further discussed in Chapter III) or with respect to its general applicability in modeling the decision to stay or quit. This research attempts to clarify this area.

Recent work by Mobley (1977) and Mobley, et al. (1979) further refines turnover modeling, suggesting that the stay/quit decision is dependent not only upon the anticipated attraction of alternatives found in models such as Vroom's,

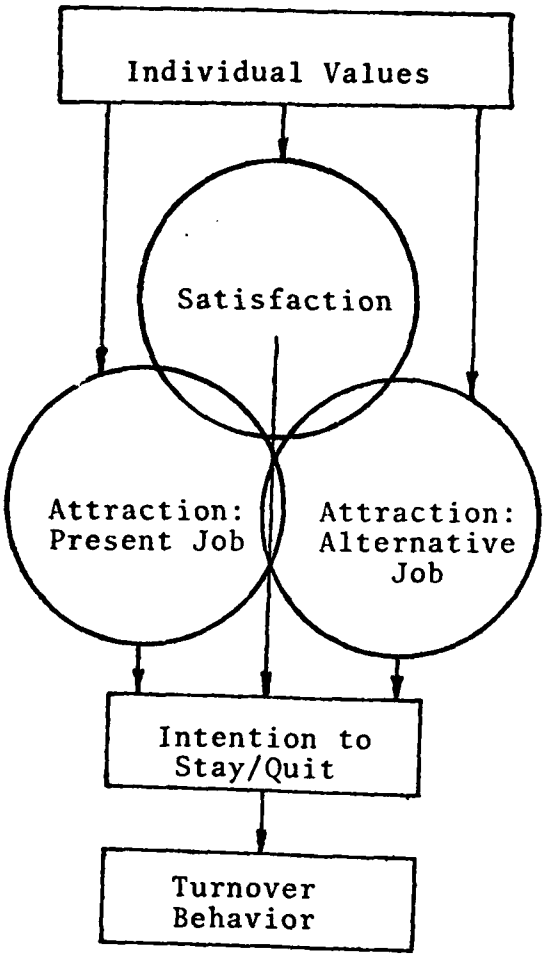

Figure 1. Stay/Quit Decision Process
(adapted from Mobley et al., 1979, p. 517)

but also on current job satisfaction and other moderating variables. Figure 1 reduces the Mobley et al. (1979, p. 517) schematic representation of the stay/quit decision process to its major components. In presenting this model, they noted: "Although many studies have analyzed the satisfaction-turnover relationship, the dual contribution of satisfaction and attraction . . . has not been researched" (p. 518). They further note an intuitive appeal of this approach in that it recognizes

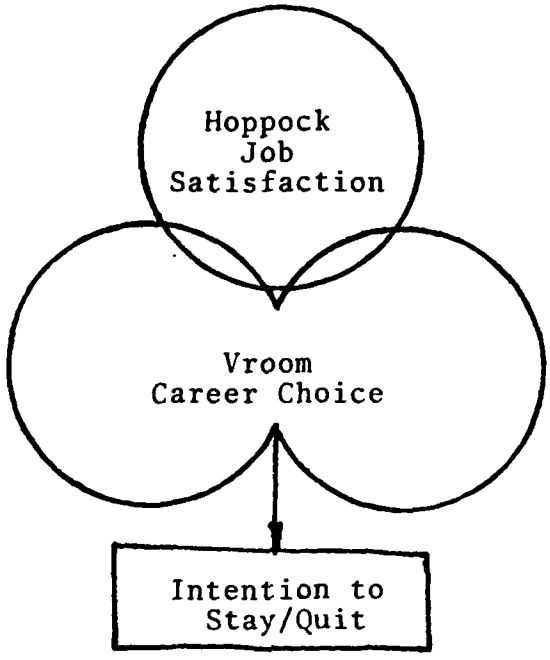

Figure 2. Stay/Quit Measures

temporal effect on the decision process. Specifically, identify the present orientation of satisfaction and the re orientation of attraction. Recognizing Vroom's (1964) ctancy Theory as a model of anticipated attraction, Stahl 0) suggests operationalizing the Mobley model using m's (1964) career choice model and Hoppock's (1935) job sfaction measure as shown in Figure 2. This thesis com- s the predictive power of this model with that of Vroom's tancy Model as operationalized by Lewis (1978).

The remainder of this chapter further details Vroom's 1) Expectancy Theory and the Mobley et al. (1979) Turnover l.

Expectancy Theory

Using concepts similar to those proposed by numerous behavioral theorists, Victor Vroom "made the first explicit theoretical formulations of Expectancy Theory applied to organizational behavior" (Mitchell, 1974, p. 1053). The theory expands on the hedonistic concept of pleasure maximization and pain avoidance. More specifically, it proposes that individuals will choose to behave in a manner which they expect will result in the most attractive set of outcomes. These outcomes may be things the person either wants or wishes to avoid.

Vroom noted that "applied psychologists have rarely been precise or systematic in their language" (1964, p. 277). This seems true for Expectancy Theory too, in that there seem to be as many interpretations of it as there are authors. In adapting hedonistic, utilitarian, economic, and psychological principles well formulated in other disciplines, Vroom relied heavily on borrowed terminology. Usage of these terms is, however, inconsistent from author to author. The following explanations of the salient terms are consistent with Vroom's original formulation and are used throughout this document.

Outcomes. The basic building block of Expectancy Theory is the concept of individual evaluation of relevant outcomes. In general, outcomes are the results of a person's actions or those of other persons or agencies. For example, if the salary for a certain job is $10 per hour, anyone performing adequately in that job would obtain the outcome of $10 per hour. There

, of course, a multitude of other possible outcomes that ividuals might evaluate in selecting alternative jobs.

One of the major problems addressed in Chapter III in rationalizing the theory is identification of relevant comes. The task is, however, somewhat simplified by evi-ce which has shown that people tend to satisfice, rather an optimize, evaluating only a limited number of variables outcomes (Porter, Lawler and Hackman, 1975).

Valence. Vroom defines valence to be an individual's ffective orientations toward particular outcomes" (1964, 15). An outcome has positive valence when an individual efers attaining it to not attaining it. An outcome has gative valence when the person desires not attaining to taining it; and an outcome has zero valence when the indi-dual is indifferent about attaining it.

With this in mind, it is evident that each individual st draw on a highly personal set of values and assign a lence to each outcome. This valence could vary across a le range on a positive to negative scale. The assigned ale dimensions being strictly a function of the orientation l strength of each individual's set of values. Vroom, wever, does not define the range of measures for valence re specifically.

In further explaining the nature of valence, Vroom (1964) kes two other salient points. First, there is a distinction tween the valence of an outcome and the value of the outcome. must be stressed that valence is the anticipated satisfaction

that an individual subjectively assigns while value is the actual satisfaction that the individual derives after the outcome occurs. This emphasizes the future orientation of the theory. The second important concept is the process the individual uses in assigning valence to an outcome. In all cases, the individual formulates a valence for an outcome based not only on the perceived desirability of that outcome, but more importantly, on the collective desirability of the outcomes that will transpire as a result of the initial outcome. This research follows the consensus in current literature by referring to the initial outcome that follows an action as "first-level" and to outcomes that result from the first-level outcomes as "second-level" outcomes.

Two basic measures of valence have been used by different authors: desirability/attractiveness, and importance. Vroom (1964) clearly defines valence as anticipated satisfaction. Although Wanous (1972) contends that importance is a reasonable measure of attractiveness, it is not clear that this is true in all cases. For example, exciting work and getting killed might both be regarded as very important outcomes for Air Force pilots, but are probably not equally attractive. Following Vroom's definition, this research addresses valence as desirability.

Instrumentality. In order to provide the cognitive link between the initial outcome and any subsequent outcomes, Vroom adopted the concept of instrumentality that had been introduced by Georgopoulos, Mahoney and Jones (1957). Vroom

defines instrumentality to be an

> Outcome-outcome association. It can take values ranging from -1, indicating a belief that attainment of the second outcome is certain without the first outcome and impossible with it, to +1 indicating that the first outcome is believed to be a necessary and sufficient condition for the attainment of the second outcome (1964, p. 18).

It is important to note that instrumentality furnishes the link between first- and second-level outcomes and not between the initial act and its resultant first-level outcome.

Other authors have suggested modification of this formulation, asserting that instrumentality is really the perceived probability that the expected outcomes will result from the intended behavior. Lawler et al. (1975) call this Performance → Outcome Expectancy; Campbell, Dunnette, Lawler and Weick (1970) call it Expectancy II; and others have simply ignored Vroom's formulation and measured instrumentality as a probability. Additional confusion is evidenced by the fact that Vroom (1966), himself, used a positive scale to measure instrumentality.

Although Lawler et al. contend that these differences are "largely differences in terminology that do not lead to different predictions with respect to the job choice situation" (1975, p. 134), there are indeed possibilities of major differences. Using the contrived data in Table III and a model similar to Vroom's, it follows that a subject would have a negative score using E_{II} (probabilitiy) values (Eq 1) and a positive score using the bipolar values for Instrumentality (Eq 2). Without settling the theoretical arguments, this

TABLE III

Comparison of Instrumentality and E_{II}

Outcome	Valence (V_i)	Instrumentality (I_i)	E_{II}
1	-5	-1	.4
2	0	5	1
3	2	1	.6

where:

$$-5 \leq V_i \leq 5 \; ; \; -5 \leq I_i \leq 5 \; ; \; 0 \leq E_{II} \leq 1$$

E_{II}:
$$\sum_{i=1}^{3} V_i E_{II} = -2 + 0 + 1.2 = -.8 \qquad (1)$$

Instrumentality:
$$\sum_{i=1}^{3} V_i I_i = 5 + 0 + 2 = 9 \qquad (2)$$

research used Vroom's original term of instrumentality.

Expectancy. To establish the cognitive link between the action of an individual and the first-level outcomes, Vroom employed a concept of expectancy similar to Atkinson's (1957) "expectancies" and Edwards' (1954) "subjective probabilities." According to Vroom, "an expectancy is defined as a momentary belief concerning the likelihood that a particular act will be followed by a particular outcome" (1964, p. 17). Unlike instrumentality, the expectancy value is a subjective probability and, as such, takes on values ranging from 0 to 1.00. Should an individual be absolutely certain that an act on his part will be followed by outcome A, his expectancy would

be 1.00. On the other hand, if the individual sees no possibility that an act will result in outcome A, his expectancy would be 0.

Other authors have alternatively referred to Expectancy I (Campbell, et al., 1970) and E → P (effort → performance) Expectancy (Lawler, 1973), both of which are analogous to Vroom's definition of expectancy.

Underlying Assumptions. Although not specifically enumerated by Vroom in the formulation of his theory, there are certain underlying assumptions about the choice process of the rational person that must be accepted for the model to be valid. The following is a synopsis of the most important of these assumptions as described by Behling and Starke (1973) and Wahba and House (1974).

1. The individual is capable of and willing to express a preference or indifference among numerous alternatives. While this principle appears quite innocuous initially, it does include the implicit assumption that Behling and Starke (1973) term comparability. Essentially, this states that the individual is able to compare outcomes which often have vastly different dimensions. For example, a worker in considering exerting more effort to improve performance is called upon to compare a 20-unit gain in promotion against a 30-unit loss in acceptancy by peers.

2. The second postulate states that an individual's preference between outcomes is transitive. This principle requires that individuals be consistent when they are

prioritizing options. That is, if an individual prefers outcome A to outcome B, and outcome B to outcome C, the individual will rationally prefer outcome A to C. While this simple three task example makes the task of choosing in a transitive manner appear to be a trivial effort, the task facing the individual in a multidimensional world is complex, perhaps beyond the computing capability of the human mind.

3. The third assumption is that valence and expectancy are independent. This postulate requires that the attractiveness of an outcome be in no way dependent upon the individual's perception of his/her ability to attain the outcome. For example, it is assumed that a worker's perception (expectancy) of his/her ability to attain high stature (outcome) in the eyes of peers is unaffected by the individual's desire (valence) for such recognition and vice versa. A strong argument can be made that in reporting the valence of this outcome, the worker will have subconsciously modified its desirability. A form of ego protection similar to cognitive dissonance might create a low desirability for an outcome perceived as unattainable. Such a defensive mechanism may account for the insignificant difference researchers have found between the predictive power of Vroom's Proposition 1 (preference model) and Proposition 2 (choice model) as defined in the next section.

4. The next postulate is that individuals optimize in their decision-making process. This postulate further implies that the individual does not resort to the establishment of a minimum standard and the acceptance of the first outcome that

meets this standard. This process, known as satisficing, is not a part of Expectancy Theory.

5. The final postulate is known as dominance and is described in the following example. Consider the situation where two actions each result in three separate outcomes. Further assume that the first two outcomes of Action 1 are at least as desirable to the individual as are the first two outcomes of Action 2, and that outcome 3 of Action 1 is preferred to outcome 3 of Action 2. This postulate then states that Action 1 should be preferred to Action 2. Wahba and House (1974) have theorized that this dominance assumption enables the individual to rapidly eliminate actions that are dominated by other actions, thereby significantly reducing the required number of cognitive calculations. Such a reduction is obviously needed in complex human choice behavior.

Expectancy Equations

Vroom specifically proposed the following mathematical models. The first model was identified as Proposition 1.

$$V_j = f_j[\sum_{k=1}^{n}(V_k I_{jk})] \quad (j = 1,...n) \qquad (1964, p. 17)$$

where V_j, called valence, is the attractiveness or desirability of the first-level outcome j, either positive or negative, while V_k is the attractiveness of the second-level outcome k; I_{jk}, called cognized instrumentality, is the perception (correlation) by the individual that outcome j will result in the attainment of outcome k, either positive or

negative; and n is the number of outcomes. The function f_j is monotonic increasing. This model has alternatively been called the valence model or the preference model (Mitchell, 1974) and has most frequently been used to predict job satisfaction, occupational preference, or the desirability of good performance.

Proposition 2, as formulated by Vroom, predicts the force to act in a certain manner.

$$F_i = f_i[\sum_{j=1}^{n}(E_{ij}V_j)] \quad (i = n + 1,...m) \quad (1964, p\ 18)$$

where F_i, force, is the motivational impetus to perform action i; E_{ij}, called expectancy, is the perceived probability that act i will be followed by outcome j; V_j is defined in Proposition 1; and n is the number of outcomes. The function f_i is monotonic increasing. This model has alternatively been called the force model, the behavioral choice model and the job effort model (Mitchell, 1974). It is significant to note that the model predicts force to act, not action or behavior.

Vroom further postulated that

> People choose from among alternative acts, the one corresponding to the strongest positive (or weakest negative) force. This formulation is similar to the notion in decision theory that people choose in a way that maximizes subjective expected utility (1964, p. 19).

This concept emphasizes the indiviudal orientation of the theory and suggests that all elements of the model first be combined to produce a force score for each individual. Nebeker and Moy (1976) propose that the prediction of an

individual's choice is then made by selecting the alternative for which the relative motivational force is the greatest. This approach is commonly called within-person analysis.

Mitchell (1974) noted that of the 27 empirical expectancy studies he reviewed, none of them used within-person analysis. Rather, most studies attempted to evaluate Expectancy Theory with an across-person analysis. This concept involves the regression of all responses from all respondents against the dependent variable of interest such as actual job choice or a surrogate measure such as career intentions. The loss of individuality due to the combinatorial process is contrary to the basic theory and may result in a reduced predictive power for the model through no fault of its own.

Across-person analysis has, however, been used to identify the importance of the independent variables such as outcome valence and instrumentality in the decision process. A problem with this approach is that it implicitly assumes that individuals having desires, instrumentalities and expectancies of equal strength will provide the same responses to scales used to measure them. There is considerable evidence that such is not the case (Guion, 1965; Nunnally, 1978). Recognizing this limitation, this research includes both within- and across-person analysis.

Expansion of Vroom's Theory

In Lewis' (1978) comprehensive literature review of Expectancy Theory developments, he recognizes three major

modifications which have been addressed by various authors:

Distinction of Expectancy I and Expectancy II

Identification of first- and second-level outcomes

Use of both intrinsic and extrinsic outcomes

He then presents a logical analysis of these developments concluding, as did Mitchell (1974), that the original theory had not been fully tested and deserved validation prior to changing its precepts. Recognizing Lewis' (1978) exceptional results, this research follows a similar approach: 1) using Vroom's (1964) original definitions (previously described) for expectancy; 2) assuming that the valences of the outcomes in the choice model (first-level) are generated by the preference model (second-level); and 3) using both intrinsic and extrinsic outcomes in accordance with Vroom's recognition that "people may seek to do well on their jobs even though no externally mediated rewards are believed to be at stake" (1964, p. 64).

A major modification not addressed by Lewis (1978), but gaining acceptance is the use of non-Expectancy Theory variables, those environmental factors with which Expectancy Theory does not deal. The identification of non-Expectancy Theory variables seems to be an extension of a statement by Vroom:

> Occupational preferences, choices, and attainments are related to demographic variables, like sex and the father's occupation, and to social variables such as family relationships and child-rearing practices . . . [and that] these relationships must be regarded as largely irrelevant to the model (1964, p. 95).

Mitchell and Knudsen further reference work by Dulany, Fishbein and Graen, citing that "an individual behaves in certain ways not only because he believes that it will facilitate attainment of rewards, but also because it is expected by others" (1973, p. 43).

A basis for recent research in this area is the Fishbein (1967) and Anderson and Fishbein (1965) hypothesis that the probability that a person will respond to a given job situation in a particular manner is a function of not only the individual's perceptions of the consequences of the actions and the desirability of these outcomes (a concept similar to Vroom's Expectancy Theory), but also the individual's beliefs about what should be done under the circumstances and personal motivation to comply. Graen further definitizes this concept addressing three determinants of behavior in his job performance model: (a) path-goal utility, (b) internal pressure, and (c) external pressure (1969, p. 22). The following is a mathematical representation of his model:

$$B = [\sum_{i=1}^{I} (A_i I_i) E'] w_o + (\sum_{j=1}^{J} R_j P_j) w_1 + (\sum_{k=1}^{K} A_k E_k) w_2$$

where

B = gain in performance

w_0, w_1, w_2 = beta weights of a linear multiple regression equation that may take any values

Path-Goal utility terms:

A_i = preference for outcome i (Valence)

I_i = belief that the attainment of the work role of effective performer will lead to outcome i (Instrumentality)

E' = the difference between the subjective probability that the act involving superior effort will lead to more effective performance and that for the act involving standard effort (Expectancy)

Internal pressure terms:

A_k = preference for the intrinsic consequence k of the act (valence)

E_k = expectancy that the act will lead to consequence k

External pressure terms:

R_j = belief as to what person j expects to do or not do (received role)

P_j = perceived pressure to comply with the expectations of person j

The similarity of the first two terms with the previous development of Expectancy Theory has apparently led recent authors (Mitchell and Knudsen, 1973; Parker and Dyer, 1976) to add a similar external pressure term to Vroom's choice model.

Mitchell and Knudsen (1973) report that the expectations of others provide better predictions when using Vroom's job choice model than the job preference model. Parker and Dyer go a step further saying that the addition of the non-Expectancy Theory variables enhance the validity of the Expectancy Theory model. They further state:

> It appears that predictions of the (expectancy) model constitute preferences, motivations or intentions. Whether or not (they) are translated into actual behavior seems to depend on three additional classes of variables: opportunity, externally oriented predictors, and individual differences (1976, p. 114).

It remains to be seen whether inclusion of these variables in

the ΣIV format originally proposed by Vroom instead of as separate variables will provide as good a predictor. This research attempts to answer this question.

Occupational Choice

The use of Vroom's Expectancy Theory as the model for behavioral choice in the turnover phenomenon is intuitively appealing. It suggests that,

> People will choose the occupation they believe will result in the greatest amount of benefit to them, provided there is a good chance they can actually attain a position in the occupation (Mitchell and Beach, 1977, p. 223).

With respect to choosing an occupation, Vroom identified three distinct levels:

1. Preferred Occupation - the occupation with the most positive valence, V_j.
2. Chosen Occupation - the occupation toward which there is the strongest positive (or weakest negative) force, F_i.
3. Attained Occupation - the occupation in which the person is a member (1964, p. 52).

Only levels 1 and 2 can be predicted by the expectancy models; level 3 results not only from individual preference and choice, but also from other factors such as actual ability and selection by an organization (Porter et al., 1975). Further distinction between job and occupational choice identified by Mitchell and Beach (1977) is unwarranted in this research since there does not seem to be a theoretical difference in

the choice mechanism.

There may be additional methodological and theoretical questions associated with evaluating the turnover process. The effects of cognitive dissonance proposed by Festinger (1957) were shown by Vroom and Deci (1971) to have significant effects on the perceptions of individuals who have attained jobs. Other investigators cited by Vroom have shown that

> Attitudes and instrumentality goal measures are not spurious but are indicative of an interdependent system in which changes in each component tend to produce changes in other components (1966, p. 213).

These factors may cause problems in the development of the data capturing instrument and, most assuredly, impact the validity of studies performed in a post hoc environment (e.g., Parker and Dyer, 1976).

Mobley's Withdrawal Decision Process

Stahl notes that:

> Because of the inclusion of several variables which individually have been empirically related to turnover process, and because of the notion of a time discount, one of the most well developed multivariate turnover models is that of Mobley, et al. (1979, p. 2).

Mobley's withdrawal decision process (Figure 3) recognizes a cognitive hierarchy from experiencing job satisfaction to the actual behavior of quitting or staying. One of the most appealing aspects of this model is the inclusion of job satisfaction, a term which has previously been shown to account for about 15 percent of the variance in turnover.

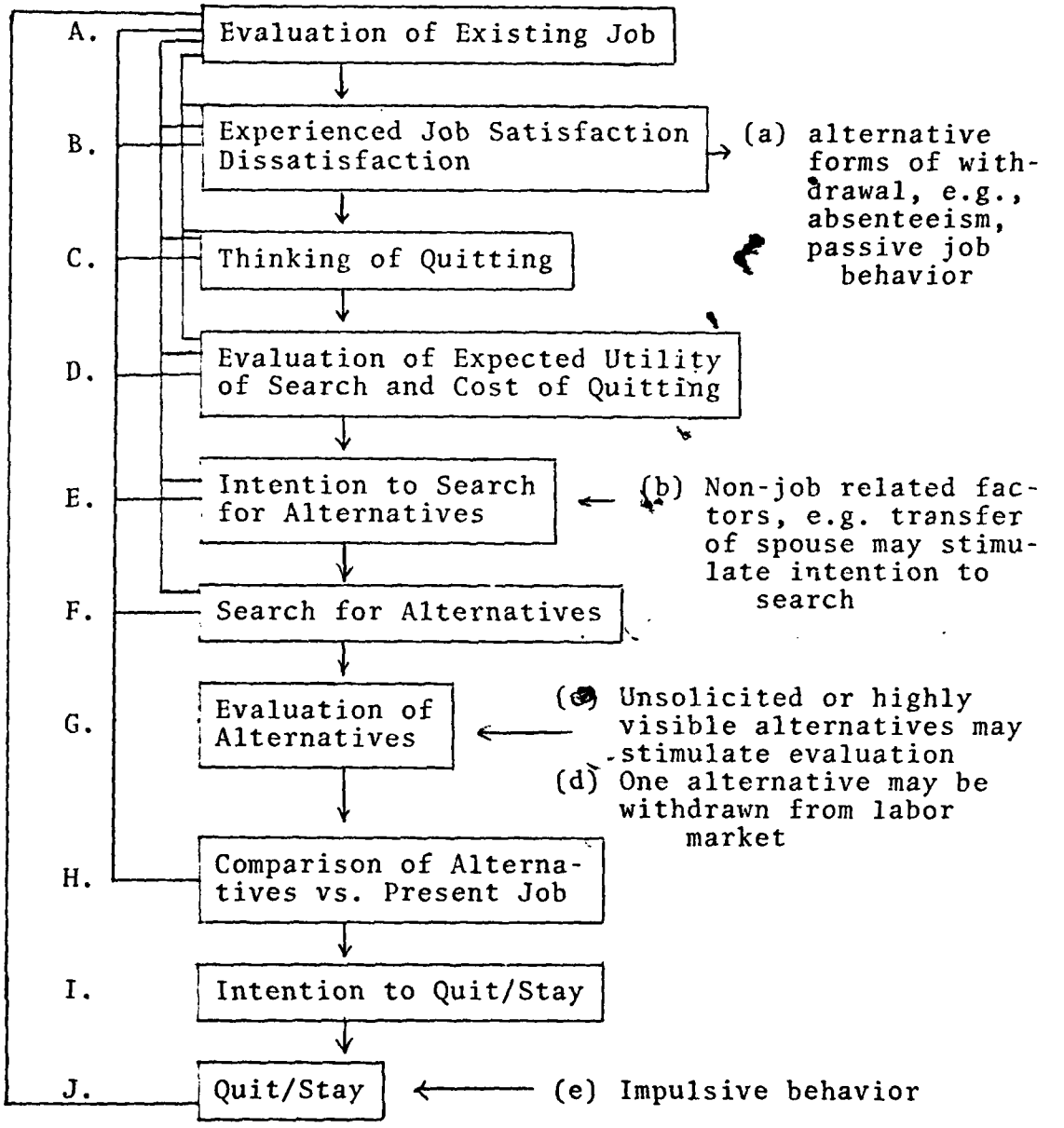

Figure 3. The Employee Turnover Decision Process (Mobley, 1977, p. 237)

Building from this original model, Mobley et al. (1979) detail the various components, conceptualizing a simplified core model (see Figure 1) based on their temporal ordering of the decision process. It is noted that satisfaction is present rather than future oriented and tends to define approach-avoidance behavior. That is to say, behavioral intentions resulting from job dissatisfaction are moderated by the expectancy utility of the present job and that of attainable alternatives and other external factors such as binding contracts and the consequences of staying or quitting. The attraction of the present job and its alternatives is viewed as being future oriented due to its association with the concept of future or expected utility.

To operationalize this model requires measurement of several complex variables: a measure of job satisfaction, attraction expected utility, and a criterion.

Job Satisfaction. Hoppock's job satisfaction measure has been shown to be ideally suited for this type of research. McNichols, Stahl, and Manley reviewed four empirical studies that used the measure and found that it "performs well when examined in terms of its distribution, convergent and concurrent validities and reliabilities" (1978, p. 6). Additionally, the measure has been shown to work well across a wide variety of job populations.

Attraction Expected Utility. Mobley et al. (1979) suggest the analogy between their "attraction expected utility index" for the present job and attainable alternatives and

Vroom's Expectancy Theory. As has been shown, Lewis' (1978) results attest to the value of Vroom's preference model in assessing the "individual-level occupational and personal variables, job-related perceptions, external perceptions, individual values and potential moderating variables" as required by Mobley et al. (1979, p. 520). This choice does not ignore Wanous' objection that

> . . . one cannot say whether valence and instrumentality perceptions caused occupational (choice), as implied by expectancy theory, whether occupational (choice), due to other factors, caused perceptions of valence and instrumentality, or whether both caused each other (1972, p. 155).

Although this is a relevant question, particularly with respect to understanding variance of results when studying the expectancy model, it is probably not critical for researchers using the model to study behavior. Snyder et al. suggested that imprecision in the model did not significantly detract from its usefulness as a framework for studies where information is evaluated on how job characteristics influence choice. In particular, they stated:

> The important advantage of expectancy theory for the study of job choice is that it describes the decision making process and identifies its components. (It is) not a concern that the exact mathematical combination of components specified by the theory (be) superior to any other possible combinations of components. As long as these components correctly predict the appropriate job choice, the model (can) justifiably be used to examine aspects of (characteristics) of particular interest to this choice (1978, p. 15).

Criterion. Mobley et al. (1979) suggest in their decision model that intention is the antecedent to turnover action; its primary determinants being (a) satisfaction, (b) attraction

expected utility of present job, and (c) attraction expected utility of alternative jobs. In the absence of the ideal, a longitudinal study, a reasonable surrogate criterion would, therefore, be career intention. This selection is further supported by two longitudinal studies (Alley and Gould, 1975; Waters et al., 1976), which examined expressed career intent and actual turnover finding that 60 to 75 percent of the subjects acted in accordance with their expressed intentions. In a separate study, Kraut (1975) also found significant correlations between expressed intention to stay and subsequent actions. Mobley et al. further suggest that "the more specific the behavioral intention statement and the less time between measurement and the behavior, the stronger the relationship" (1979, p. 517).

A similar argument to Wanous' (1972) can be made against the use of career intention as a surrogate for actual turnover. One cannot say whether satisfaction and attraction expected utility cause career intent or whether career intent, due to other factors, caused perceptions of satisfaction and attraction expected utility. Without answering this philosophical question, this research uses career intent as the criterion variable.

III. Methodology

Basic Design

The research methodology employed in this project was formulated only after several factors had been considered. The primary determinants were the basic research objectives enumerated in Chapter I. Additionally, two other factors influenced methodology design. The first of these was the unique nature of the research population. Each population member was in the midst of a military career. This career, by tradition and legal statute, contains several distinquishable points at which the individual must make a conscious decision concerning continuation of a military career. The existence of these identifiable decision points provided the researchers with an opportunity to accomplish the basic research objectives not only for the population as a whole, but also for segments of the population who were various distances from one of the career decision points.

Secondly, this research was influenced by the work of Lewis (1978). In several instances, items in the survey and subsequent data analysis procedures were the result of a success or, in some instances, a failure experienced by Lewis.

The Beginning

As related in Chapter I, this research was initiated by a request from Dr. Bernard A. Kulp, Chief Scientist, AFSC

Directorate of Science and Technology (Appendix A). Upon receipt of this request, an analysis of the size and geographical distribution of the AFSC company grade officer force was accomplished using data supplied by HQAFSC. Analysis of these data indicated that the entire company grade population could be included in the research without violating the manpower and computer availability constraints which existed. This analysis further indicated that the research data would have to be gathered by a mailed questionnaire due to the wide geographical distribution of the population. (See Appendix D for geographical distribution of AFSC company grade officers.)

The Survey

In designing the survey, as in formulation of the overall methodology, the accomplishment of research objectives was the prime consideration. However, at this point it became necessary to consider the fact that the survey would be administered at several locations which were remote from the research team. This meant that the survey must, on one hand, be comprehensive enough to capture the necessary data, yet on the other hand be compact and concise enough to insure both correct interpretation and a high response rate. These two guidelines, which seemed often to compete, provided direction to the survey design.

The foundation of the current survey was provided by the work of Lewis (1978). Extensive changes were, however, made to the Lewis instrument to account for changes in research objectives, methodology, and expansion of the population. The

following provides a description of the current survey and the rationale and techniques that went into its conception. The survey is reproduced in Appendix C.

The Demographics. The survey contained 12 demographic questions in Part I. These items were formulated primarily to allow the researchers to identify specific subsets of the sample, e.g. married/unmarried, female/male. Additionally, certain items were included to determine how near the respondent was to one of the Air Force career decision points. These latter items enabled the researchers to determine: 1) if the individuals were able to tender their resignation if they so desired, and 2) whether the respondents were under the influence of what has been called the "golden handcuffs" associated with the military 20-year retirement system.

Second-Level Outcomes. The next step in building the survey was to determine the appropriate second-level outcomes for use in Vroom's (1964) Expectancy Theory. Methods to accomplish this vary from allowing the subjects to generate their own second-level outcomes (Matsui, Kagawa, Nagamatsu and Ohtsuko, 1977) to the more popular method of presenting the respondent with a list of outcomes that had been derived by the author. The former method, while insuring that subjects were faced only with the evaluation of outcomes that are relevant to them, presents the researcher with various psychometric problems. Specifically, the researcher, in order to keep the data analysis effort at a reasonable size, must reduce the entire outcome list to one which contains "typical" or "most often mentioned" items.

Mitchell cites the danger in this, stating, "The use of a shortened list, however, may attenuate our prediction of the extent that outcomes are missed that are important for given individuals" (1974, p. 14). In order to control the number of second-level outcomes to be included in the data analysis and avoid the difficult issue of producing a "typical" list from all respondent-stated outcomes, it was decided that the survey would include outcomes that have been predetermined by the researchers.

Once this decision was made, it was necessary to determine the number of outcomes that would be included and their content. These issues were resolved through the use of three data sources: 1) the survey instrument of Lewis (1978); 2) a review of the literature; and 3) informed intuition of the researchers.

The initial phase of this outcome determination process involved an extensive review of Expectancy Theory literature to determine the number of second-level outcomes that had been used in previous job choice research. The numbers varied from six in the case of Matsui et al. (1977) and Wanous (1972) to 49 used by Snyder et al. (1978). (For a complete list of literature and the number of outcomes used, see Table IV). To further aid in the search for the optimum number of outcomes to be included in the survey, the research of Schwab, Olian-Gottlieb and Heneman (1979) was reviewed. In this effort, Schwab, et al. analyzed 32 Expectancy Theory studies and found that "studies that used 10-15 second-level outcomes obtained

TABLE IV

Number of Outcomes Used in Past Research

Author	Number of Outcomes
Lawler et al. (1975)	11
Lewis (1978)	20
Matsui et al. (1977)	6
Mitchell and Albright (1972)	12
Mitchell and Knudsen (1973)	12
Parker and Dyer (1976)	25
Schneider (1976)	30
Sheard (1970)	20
Sheridan et al. (1973)	19
Snyder et al. (1978)	49
Vroom (1966)	15
Vroom and Deci (1971)	15
Wanous (1972)	6

stronger relationships between force and performance or effort than did studies that used either fewer or more outcomes" (1979, p. 145).

Armed with these findings, the researchers began an analysis of the survey used by Lewis (1978). It was felt that while many of the outcomes used by Lewis would be relevant to the current effort, an analysis of the data collected by Lewis could improve the list of outcomes. To begin this process, a factor analysis was run for all the second-level valence responses that Lewis received from 645 respondents. The factor

analysis, using a VARIMAX rotated factor matrix, indicated that there were five latent variables underlying the 20 second-level outcomes. The number of factors to be retained in the final solution was determined using the λ_i test described by Nie et al. (1975, p. 479). Only factors with eigenvalues greater than or equal to one were retained. These underlying factors could be identified as: 1) monetary rewards; 2) security and stability; 3) familial interests; 4) recognition and prestige; and 5) other intrinsic rewards. At this point, a Pearson product-moment coefficient was calculated for each second-level valence with all others. These results were used to verify the relationships between and among outcomes that were calculated by the factor analysis.

The next step was to determine if some of the outcomes within a factor could be combined with or deleted in favor of other outcomes associated with that factor. This was accomplished by analyzing the power that each of the variables displayed in the Lewis (1978) research. Specifically, the outcome's strength was equated with the power that variable displayed in a regression model used by Lewis. This method of strength determination was used since the same type stepwise regression with career intent as the criterion variable was included in this current research project.

At this point, the personal expertise and experience of the researchers and their research advisor were introduced to the outcome determination paradigm. It was felt that recent developments in the Air Force, such as extensive changes in

the officer evaluation system, demanded special consideration. In order to insure that current high interest issues were included, the three individuals mentioned above, all Air Force officers, drew on their experience.

Upon completion of all of the above steps, the 11 outcomes that appear in Part II of the survey were chosen as being best suited for the research. These outcomes form the basis for Parts III and IV of the instrument.

Valence. Part II of the survey was formulated to capture the respondent's valence for each of the 11 outcomes. The concept of valence, as described in Chapter II, refers to the attractiveness or desirability of the individual outcomes.

The valence quantity was measured using a summative scale made popular by Likert (1932). Nunnally (1978) enumerated the advantages of the summative scale for the measurement of attitudes. The specific Likert scale used to capture valence was bipolar, consisting of eleven points. The scale ranged from -5 to +5 and had the following verbal anchors: Extremely Undesirable (-5), Indifferent (0) and Extremely Desirable (+5).

The 11-point scale was chosen over a more compact one due to the nature of the outcomes chosen. It was felt that responses for a given outcome would, in most cases, be either primarily positive or primarily negative. The concentration of responses on one-half of the scale effectively limits the width of the scale to half its original scope. This psychometric restriction would have limited the reliability of the

scale and the variance of the responses which, in turn, would have adversely affected any statistical analysis which used the data. The 11-point scale was adopted to minimize this problem and for comparability with the Lewis (1978) data.

Instrumentality. Parts III and IV of the survey were designed to capture an instrumentality term for use in Expectancy Theory. As stated in Chapter II, instrumentality is the perceived association between a first-level outcome and a second-level outcome. In this research, respondents were asked to indicate the degree to which they associated the 11 second-level outcomes with an Air Force and with a civilian career. In each instance the subjects read a series of statements which asserted that the specific career was associated with one of the 11 outcomes. The respondents were asked if they agreed or disagreed with the statement. Again, in order to permit response variance, the subjects' sentiments were captured using an 11-point, bipolar Likert scale. This scale ran from -5 to +5 with the following verbal anchors: Completely Disagree (-5), Undecided (0) and Completely Agree (+5).

Expectancy. Parts V and VII of the survey were designed to capture the expectancy term of Vroom's (1964) theory. As addressed in Chapter II, this term indicates the subject's perceived probability that he/she can achieve a goal (in this case a specific career) if he/she attempts to do so. Several previous research efforts such as Lewis (1978), Stahl (1979) and others documented by Schwab et al. (1979) have questioned

the utility of Vroom's (1964) expectancy term. In order to insure that the well-demonstrated weakness in this term was not merely a psychometric problem of not "asking the right question," three attempts were made to capture expectancy.

The first two attempts were made in Part V. Items 1 and 2 in this part asked the respondents to estimate their probability of completing an Air Force career and their chance of completing a civilian career. An Air Force career was defined as reaching retirement eligibility by completing 20 years of service. A civilian career was defined as attaining a position at least equivalent in salary and responsibility to an Air Force middle manager (Major or Lt. Colonel) within 20 years.

Items 3 and 4 of Part V represent the second attempt to determine expectancy. The reason for these items becomes apparent when one examines the long-term projection that is demanded by the first expectancy terms. This long-range projection is especially difficult with the recent consideration and introduction of several policies and programs which have large impacts on officer force strengths and promotions. In order to provide respondents with expectancy terms requiring a less formidable projection, items 3 and 4 of Part V were introduced. These items require the respondents to project ahead only to the rank of Major and to a civilian position which has duties and responsibilities comparable to their present rank. This relatively short-term projection, it was postulated, should alleviate some of the inconsistency

associated with mentally calculating the probability of reaching a goal which, in some cases, was 20 years in the future. Additionally, the short-term expectancy items are not required to deal with the inherent incompatibility between the relatively short length of a complete Air Force career and its more lengthy civilian counterpart.

All four of the above expectancy terms were captured on an 11-point scale which ranged from 0 to 100 percent probability. The lower end of the scale was verbally anchored with the words "No Chance. It would be impossible for me to complete such a career if I attempt it." The 100 percent, or upper end of the scale was anchored with, "Certainty. Without doubt, if I attempt such a career, I will be successful."

The final attempt to capture a value for expectancy was accomplished using a portion of the Internal-External scale introduced by Rotter (1966). This method differs from the first two attempts in that it deals with a generalized expectancy. That is, rather than requiring the respondent to state a definite probability of achieving a specific career, this method deals with the respondent's view of how rewards or reinforcements are controlled. The Internal-External scale determines if individuals see their lives as something they control or as something controlled by luck or other uncontrollable forces. This final method, then, does provide an expectancy value. The method, however is less direct than the first two; the resulting value is less specific.

The Rotter expectancy scale for this research consisted

of 15 pairs of statements. Twelve of the items that were chosen were those that Rotter developed to measure a generalized expectancy term and the remaining three dealt with interpersonal relationships. The 14 items from Rotter's original scale that were not included in this survey address political, educational and religious issues or serve as fillers to disguise the intent of the test. The instructions provided to the respondent were in accordance with those recommended by Rotter (1966). Specifically, the subjects were asked to select the one statement from each of the 15 pairs with which they most agreed (forced choice). The Rotter expectancy value was calculated by summing up the number of external responses that the individual selected from the 15 pairs. Numbers near 15 indicate the individuals believe they have little control over their lives while low numbers portray individuals who believe they control their own destiny.

Outcome Importance. The next portion of the survey was designed to deal with the issue mentioned earlier, optimum number of outcomes. In an effort to further investigate this question, the researchers, as is explained later in this chapter, evaluated the predictive power of Vroom's (1964) model using varying numbers of second-level outcomes. Specifically, the model was evaluated using the five most important, the eight most important, and all 11 outcomes. Items 1 and 2 of Part VI were designed to establish the importance ranking necessary for this analysis. In this part, subjects were presented with two lists of the 11 career-related outcomes and

asked to indicate the five outcomes that had the most bearing and the three outcomes that had the least bearing on their career selection decision.

Mobley Variables. Items 3 through 6, 8, 9, and 10 in Part VI capture a number of different, apparently unrelated variables. These quantities are, however, linked in that each plays a role in the operationalization of the Mobley (1977) employee turnover model. This model, which was discussed more completely in Chapter II, suggests that the factors which go into the career selection model are, in reality, both present and future oriented. The present factor is quantified by measuring current job satisfaction while the future portion is represented by the expected or anticipated dimension inherent in Expectancy Theory.

The measurement of job satisfaction was accomplished through the use of Hoppock's (1935) model. This model, which is discussed in Chapter II, consists of four questions (Items 3 through 6, Part VI). Each of the four items has seven possible responses which have been assigned a numerical value one through seven. The data are captured such that the higher the satisfaction, the higher the number recorded. The responses for all four items are added to accumulate an overall job satisfaction index. It should be noted that the numerical values assigned to the responses for items 3 and 6 must be inverted to consistently associate a higher number with greater job satisfaction.

Items 8, 9, and 10 of Part VI operationalize the remaining

portion of the Mobley (1977) model. The frequency with which an employee thinks about quitting is measured by item 8. Respondents were asked to estimate how often they thought about quitting the Air Force. Responses were measured on a five-point scale ranging from 0 to 4. The scale was verbally anchored at Never (0) and Constantly (4). This scale is consistent with that recommended by Mobley, Horner and Hollingsworth (1978). Items 9 and 10 in Part VI capture the Mobley (1977) variables which concern the respondents' search for job alternatives and their intention to stay or quit. In these items, the subjects were asked: 1) if they had participated in job interviews with civilian employers in the last year, and 2) if they had established a Date of Separation from the Air Force (a necessary administrative step before voluntary separation from the Air Force).

External Pressure. As discussed in Chapter II, Fishbein (1967) and Graen (1969) postulate the existence and importance of a force that is exerted on the career decision-making individual by other individuals. In other words, employees, when making a career decision, consider not only their own needs and desires, but also integrate into the decision what others expect (want) them to do. For this research, the "others" were defined to be members of the individual's immediate family or a spouse.

Items 11 and 12 of Part VI were designed to measure this non-Expectancy Theory variable. Item 11 was used to determine the feelings of the respondent's spouse or immediate family

toward the subject's Air Force career. It asks the respondents to indicate how much their spouses or immediate families expect or want them to make a career of the Air Force. This item used a Likert, bipolar, verbally-anchored, 11-point scale that ranged from -5 to +5. The scale was anchored by the words: VERY LITTLE (-5), INDIFFERENT (0), and VERY MUCH (+5).

Item 12, Part VI was designed to measure how important the expectations of others are in the respondent's career decision process. The subjects were asked to state how important they considered these expectations. This issue was captured using the same Likert scale described above. The verbal anchors for this scale were also the same as those used in item 11. The verbal anchoring of this scale created a psychometric problem which is discussed more completely in Chapter IV.

Criterion Variable. The final survey item to be discussed is, without doubt, the most important. This quantity, career intent, served as the criterion variable in the analysis that was performed. In accomplishing research of career turnover, the investigator is faced with an issue of what criterion to use. On one hand the research can involve a long-term longitudinal study which models how the subject "should" act, then waits, often a number of years, to see how he does act. On the other hand, the time necessary for the research can be greatly shortened by modeling how the subjects "should" act and then asking them how they intend to act.

This second method has evoked some controversy concerning its dependability. Lassiter and Proctor state that when asked whether they plan to stay in or leave an organization, "Young managers in large, formal hierarchically structured organizations can be expected to answer that question 'Of course, I plan to stay' in order to protect his or her option" (1976, p. 2). In sharp contrast to the observations of Lassiter and Proctor (1976), Stahl (1979) cited 11 studies which found that survey respondents, once they had stated an intention to act, had a high probability of acting in accordance with the stated intention. Of specific note were studies by Alley and Gould (1975) and Shenk and Wilborn (1971). These efforts, which were longitudinal studies of the turnover process of almost 60,000 military personnel, confirmed the strong correlation between stated intention to stay or leave and actual behavior. This preponderance of evidence led the researchers to capture the criterion of turnover intention by using a respondent-stated career intent.

The career intent variable was attained through the use of a single item (Item 7, Part VI). This item presented the subject with seven statements which ranged from "definitely intend to make the Air Force a career" to "definitely do not intend to make the Air Force a career." Respondents were asked to pick the statement that best described their career intentions.

Survey Pre-Testing

Since the survey was to be completed at locations which

were remote from the researchers, it was necessary to accomplish a thorough pre-test. The individuals selected for this pre-test were military officers who were just beginning their course of study at the Air Force Institute of Technology (AFIT). The initial survey was administered to 24 officers. Each person was encouraged to point out sections of the survey that were unclear or difficult to interpret and to voice any suggestions they had for improving the survey. Several valuable comments and suggestions were made concerning: 1) wording for the second-level outcome designed to reflect the Air Force "up or out" policy, 2) wording of the long-range expectancy terms, and 3) modification of certain demographic items.

Reliability (Test-Retest)

The reliability of the survey instrument was determined using the test-retest method. Specifically, the instrument was administered to 24 entering AFIT students as described above. Since this pre-testing resulted in the modification of only nine of the 75 survey items, this administration was used as the initial portion of the reliability check. The retest administration was conducted with the same student group two months after the initial test.

The response sets from 17 of the 24 subjects were used for the reliability check. The responses of seven individuals were discarded because researchers were unable to make a definite match between the two instruments completed by these seven individuals. Data from the 17 individuals were analyzed

using two methods. The first began by selecting all 17 pairs of responses for a given question. A Pearson product-moment coefficient was then calculated between the first and second responses to that question. This procedure was completed for 56 items which appeared in both test administrations. (Demographic data and outcome importance ranking were not included in the correlations.)

The second method began by selecting all of the data provided by a given person during both test administrations. A Pearson correlation coefficient was then calculated between the individual's first and second responses to all 56 items. (Again, demographic data and outcome importance were not included in the correlations.)

Survey Distribution

As the above described survey design was being accomplished, plans were being made for distribution of the survey and its subsequent collection. As mentioned in the initial contact letter from Dr. Kulp (Appendix A), the AFSC Company Grade Officers Council (CGOC) had agreed to aid in this effort. Since the CGOC at Andrews AFB (HQAFSC) maintained frequent, personal contact with officer councils at each of the AFSC bases, it was decided that the headquarters council would serve as the focal point for the distribution effort. The most expeditious and efficient method of distribution, it was determined, was to send the instruments to HQAFSC, where they were divided and forwarded to the appropriate locations. For

a list of the bases participating in this research, see Appendix D.

Collection of the completed survey was accomplished by one of two methods. In order to insure anonymity, each respondent was provided an envelope with the instrument. Respondents were instructed to place the completed survey in the envelope and either drop it in the U.S. mail or return it to their CGOC representative. Reponses returned to the CGOC were forwarded to the researchers through USAF Courier channels. Of the 4350 surveys distributed, responses were received from 2200, for an overall response rate of 51 percent.

Data Transformation

Once the surveys had been completed and returned to the researchers, it was necessary to convert the data into a form that was conducive to statistical analysis. This process contained several steps. First, the survey data were transposed manually to survey answer sheets (AF Form 223) that could be processed by an optical scanner. These answer sheets were then scanned using an OPSCAN 17. The results were transferred to IBM computer cards. The final step involved sorting the card data and storing it on a permanent file on a CDC 6600 computer, where it remained during the subsequent data analysis. It should be noted that periodically throughout this process, checks were made to insure that the manual and automatic data processing techniques produced accurate data. In all instances the number of errors found were a very small percentage (less

than 1%) of the total data base.

Statistical Analysis

Once all the survey data were processed and stored on a permanent data file, the statistical analysis began. All statistical techniques and procedures used in this research were supplied by the Statistical Package of the Social Sciences (SPSS). A thorough documentation of the underlying mathematics and specific capabilities of this software is provided by McNichols (1978), and Nie, Hull, Jenkins, Steinbrenner, and Bent (1975).

The statistical analysis consisted of two phases. The initial phase, hereafter referred to as data preparation, was designed to accomplish the following goals:

1. Provide descriptive statistics which detailed the distribution of the survey data
2. Provide consistency checks for a portion of the captured data
3. Determine the utility and optimum form of the expectancy value
4. Determine the optimum number of second-level outcomes to use in Expectancy Theory research.

Upon completion of the initial data preparation phase, a second phase, hereafter referred to as objective accomplishment, was initiated. This facet was oriented toward completion of the primary objectives outlined in Chapter I. Again, briefly stated, these objectives were:

1. Determine the career intent of AFSC company grade officers using Vroom's (1964) Expectancy Theory.
2. Determine the effects that persons who possess a strong emotional link with an individual have on that individual's career decision.
3. Determine whether the importance of factors which influence career intent change as the individual's career progresses.
4. Identify, using Vroom's (1964) Expectancy Theory, the factors that are most closely related to the career selection decision of AFSC company grade officers.

Data Preparation (Phase I)

Descriptive Statistics. This portion of the data preparation phase was accomplished to gain a knowledge of the distribution of the survey data. These statistics were produced using the SPSS frequencies option. This option was configured to produce a mean, mode, standard deviation, variance and frequency histogram for each input variable. The input variables consisted of:

1. Each of the individual survey items
2. Rotter and Hoppock indices (calculations were described earlier in this chapter)
3. Service Index (total of an individual's enlisted and officer service and incurred commitment)

Career Intent. As mentioned earlier, the respondent-stated career intent served as the criterion variable for this research. Due to its major role in this project, the researchers felt that it was desirable to investigate the nature of this quantity. This analysis did not seek to test specific hypotheses, but rather to provide additional information into the consistency and underlying nature of the career intent quantity. Specifically, this segment consisted of calculating a correlation coefficient between career intent and the following variables:

1. Frequency of thinking about leaving the Air Force
2. Participation in civilian job interviews
3. Date of separation status
4. All expectancy terms
5. Level of education
6. Hoppock Job Satisfaction Index

Following this analysis of the nature of the career intent variable, an investigation was conducted into a phenomenon called the "golden handcuffs." This factor is more concisely defined as a point in individuals' careers when they feel that the financial loss they will experience from changing careers will exceed any gains they might receive from the new career. Members of the military are particularly susceptible to the influence of "golden handcuffs" due to the 20-year retirement system.

The implications of such a force affecting members of the survey population were significant. This force manifested

itself in the career intent variable. Specifically, it was theorized that after the "golden handcuffs" were in place, the variance exhibited by the career intent variable would approach zero no matter how attractive or unattractive civilian careers were determined to be. This lack of variance, theoretically, would serve to weaken Expectancy Theory when the theory was used to predict career intent.

In order to determine the point at which the "golden handcuffs" become effective, the following procedures were accomplished:

1. Calculate a service index. This value is the sum of enlisted service (if any), officer service, and any commitment incurred.
2. Select segments of the total population by service index.
3. Calculate the variance of the career intent variable for each of the population segments selected above.
4. Determine the service index point where the variance in career intent approaches zero.

Once the "golden handcuffs" point was determined, the information was used to select the sample for analysis in Phase II, objective accomplishment. Specifically, unless otherwise mentioned, all analyses in Phase II excluded respondents who were past the "golden handcuffs" point.

The Nature of the Expectancy Term. As related above, the optimum form and the utility of the expectancy term

espoused by Vroom (1964) has been the subject of considerable study and controversy. The purpose of this segment of the analysis was to investigate the nature of the expectancy values that had been collected in the survey.

This study began by calculating the variance that was exhibited by each of the expectancy terms. It was felt that terms which showed little or no variance could be discarded early in the research as they would be of no value in subsequent analyses. Once the variance values were examined and the decision made concerning which, if any, of the five expectancy terms to discard, the next step in the analysis was begun. This step was an investigation of the underlying nature of the expectancy terms. Its purpose was to determine the true dimensionality of the five variables, to uncover the latent variables which provided the foundation for these quantities, and to calculate correlations that existed among the terms and other variables captured in the survey.

This investigation began with an SPSS factor analysis of the five expectancy values. This was followed by a factor analysis of the 15 Rotter items which went to make up the Rotter index and a final factor run using only the 12 Rotter variables which were related to general expectancy (the interpersonal terms were deleted).

Upon completion of the factor analysis, the investigation of the nature of the expectancy terms continued with the calculation of a series of Pearson product-moment coefficients. While this portion of the analysis was not intended

to accept or reject particular hypotheses, it was designed to provide additional insight into the nature of the expectancy values. This segment consisted of the following SPSS Pearson correlations:

1. Air Force Long- and Short-Range Expectancy, Civilian Long- and Short-Range Expectancy, and Rotter Index with:
   - Present Grade
   - Total Federal Service
   - Level of Education
   - Source of Commission
   - Career Status
2. All expectancy values with each other

Expectancy, Its Utility. The next segment of the data preparation phase, rather than exploring the nature of the expectancy terms, studied the utility of the term's use in Expectancy Theory. In order to proceed with this methodological discussion, it is necessary at this point to describe the operationalization of the within-person model decribed in Chapter II. This method was used for within-person testing by Lewis (1978). The operationalization began by calculating force scores for both Air Force and civilian careers (see Chapter II for a discussion of force calculations). The procedure, thus far, is in consonance with Vroom (1966). However, Vroom's next and final step in the process was to select the organization with the highest force score. Lewis (1978) was faced, not with the dichotomous choice addressed by Vroom,

but rather with a seven-point career intent scale. To accommodate this variable, which is interval scaled at best, and still adhere somewhat to the precepts of Vroom, Lewis chose to calculate a Total Force variable. This quantity is simply the force for an Air Force career minus the force for a civilian career. The magnitude and size of this quantity indicate Expectancy Theory's evaluation of the strength and directions of the individual's sentiments concerning an Air Force career. In equation form this method is:

$$\text{TOTAL FORCE} = \begin{pmatrix}\text{Air Force}\\ \text{Expectancy}\\ \text{Term}\end{pmatrix} \sum_{k=1}^{n} V_k I_{AF,k} - \begin{pmatrix}\text{Civilian}\\ \text{Expectancy}\\ \text{Term}\end{pmatrix} \sum_{k=1}^{n} V_k I_{CIV,k} \qquad (3)$$

where

V_k = valence of outcome k

$I_{AF,k}$ = instrumentality of an Air Force career for the attainment of outcome k

$I_{CIV,k}$ = instrumentality of a civilian career for the attainment of outcome k

n = number of outcomes

In addition to the calculation of a Total Force term, Eq (3) can be slightly modified to produce a Total Valence value. This term is calculated by deleting all expectancy values from the equation. Throughout this research "Total Force" is used to represent the value derived from Eq (3) using expectancy terms; "Total Valence" refers to values computed using the equation with no expectancy terms.

The final step, then, was the calculation of the correlation

coefficient between the Total Force or Total Valence and respondent-stated career intent. It was this model and the portion of the sample that displayed variance in the career intent variable that were used to determine the utility of the expectancy term. Specifically, the following calculations were made:

1. Calculations of Total Force using long-range expectancy terms
2. Calculations of Total Force using short-range expectancy terms
3. Calculation of Total Valence using no expectancy terms
4. Pearson correlation of the above Total Force/ Total Valence values and respondent-stated career intent.

(Note: The Rotter index was not included in the above as it could not be broken into Air Force and civilian components)

The utility and optimum form of the expectancy term were found by identifying the Total Force/Total Valence that exhibited the strongest correlation with career intent. If the Total Valence associated with no expectancy term was as powerful as the Total Force associated with expectancy terms, one could conclude that the expectancy values captured add no predictive power. This finding would dictate the exclusion of the expectancy term from subsequent analyses.

Optimum Number of Outcomes. The final step in the data preparation phase was the determination of the optimum number

of second-level outcomes for use in Expectancy Theory analysis. This segment began with the compilation of data concerning the relative importance of the 11 second-level outcomes (see survey items 1 and 2, Part VI). By running SPSS COUNT on the outcomes listed in these items, a determination was made of the sample's five and eight most important outcomes. These data were combined with the optimum expectancy term, if any, the sample which exhibited a variance in stated career intent, and the within-person model described above to accomplish the following:

1. Calculate Total Force or Total Valence using the five most important outcomes
2. Calculate Total Force or Total Valence using the eight most important outcomes
3. Calculate Total Force or Total Valence using all eleven outcomes
4. Calculate a Pearson product-moment coefficient for each of the above Total Force or Total Valence terms with respondent-stated career intent.

The optimum number of outcomes was found by identifying the Total Force or Total Valence that exhibited the strongest correlation with career intent.

Up to this point, all methodological issues were oriented toward what was termed data preparation. This term was perhaps a misnomer, for the following had been determined:

1. The distribution of all survey data
2. The underlying nature and consistency of certain

important survey items

3. The point at which the "golden handcuffs" affect the sample
4. The utility and optimum form of the expectancy term
5. The optimum number of second-level outcomes to be used in Expectancy Theory.

From this point, the research proceeded to the objective accomplishment phase which had as its purpose the satisfaction of all primary objectives discussed in Chapter I. At this time it should again be noted that, unless otherwise stated, all analyses in Phase II use only officers who had a service index less than the "golden handcuffs" point.

Objective Accomplishment (Phase II)

Vroom's Model. The first segment of the objective accomplishment phase was devised to determine the power of Vroom's (1964) model to predict career intent for the AFSC company grade officer population. This analysis relied on Eq (3) which operationalized Expectancy Theory in a within-person mode. In using this equation to calculate a Total Force or Total Valence term, the following findings of Phase I were considered: 1) the utility and optimum form of an expectancy term and 2) the optimum number of second-level outcomes.

Once the Total Force or Total Valence calculation was complete, it was necessary to determine the correlation between the calculated value and the respondent-stated career intent.

This was accomplished using the SPSS Pearson correlation option.

External Pressure Analysis. Once Vroom's (1964) basic model had been tested in a within-person mode, the next segment of the objective accomplishment phase sought to examine the precepts of Fishbein (1967) by analyzing the role of the opinions of others in the individual's career decision process. This segment, while again using a calculation of Total Force/ Total Valence and self-reported career intent, differed from the above analysis. Specifically, the instrumentality-valence products for both an Air Force and civilian career were calculated without including the outcome which refers to family's opinion (number 10). This force was granted special status in that rather than being one of the quantities in a large summation, it was treated as a separate term in a linear regression model (per Fishbein, 1967). This model when placed in equation form appears as:

$$\text{TOTAL FORCE} = \left[\left(\begin{array}{c}\text{Air Force}\\ \text{Expectancy}\\ \text{Term}\end{array}\right)\sum_{k=1}^{n-1} V_k I_{AK,k} - \left(\begin{array}{c}\text{Civilian}\\ \text{Expectancy}\\ \text{Term}\end{array}\right)\sum_{k=1}^{n-1} V_k I_{CIV,k}\right] + \begin{array}{c}\text{FAMILY}\\ \text{OPINION}\\ \text{TERM}\end{array} \quad (4)$$

where:

V_k = valence of outcome k

$I_{AF,k}$ = instrumentality of Air Force career for the attainment of outcome k

$I_{CIV,k}$ = instrumentality of civilian career for the attainment of outcome k

FAMILY OPINION TERM = Part VI (item 11) x (item 12)

n - 1 = optimum number of terms minus outcome 10

(Note: The results of Phase I prescribed the optimum number of outcomes and the use of the expectancy term.) It should be noted that this term, like Eq (3), produces a Total Valence as opposed to a Total Force when formulated without an expectancy value.

The final step was to run an SPSS linear regression with self-reported career intent as the criterion variable and the two terms which make up Total Force/Total Valence in Eq (4) as the independent variables.

Upon completion of the second segment of Phase II, an analysis was made to determine which of the two models formulated above was the most powerful in explaining the variance in career intent. This was accomplished by inspecting the bivariate correlation produced using Vroom's basic model and career intent and the multiple correlation coefficient produced by this linear regression model.

Mobley Analysis. The third segment of this phase sought to build on the first two segments by adding a temporal dimension to the career selection process. This investigation, involving the operationalization of Mobley (1977) model, included terms that were present oriented (job satisfaction) and others that were future oriented (anticipated attraction of Air Force and civilian careers). In calculating the future attraction term, the researchers used the most potent of the two models generated earlier in the phase. This term(s) was then combined with job satisfaction as represented by the

Hoppock index to complete the list of independent variables. Respondent-stated career intent was used as the criterion variable.

Upon completion of this segment of Phase II, an investigation was conducted into the power of this new model. Specifically, the problem was to determine how much explanatory power the new variable, job satisfaction, added to the model. This was accomplished using the partial F-test as described by McNichols (1978, p. 4-53) and by observing the multiple correlation coefficients.

Changing Importance of Mobley Variables. The next segment of Phase II was accomplished to determine if the importance of temporal factors which go into the career selection decision change throughout an individual's career. In order to investigate this issue, the model formulated in the Mobley Analysis segment just discussed was re-run. In this instance, to enable the researchers to observe the difference in importance in these terms as an officer career advances, a series of forced hierarchical inclusion regressions were run. These runs forced the future oriented anticipated attraction terms into the regression first, followed by the present oriented Hoppock Index. The first run included officers who had been commissioned one year, the second included only officers with two years commissioned service, and so on until runs had been made for each grouping up to 12 years of commissioned service.

Across-Person Analysis. The final two segments of Phase II were designed to address the specific concerns of Dr. Bernard

Kulp and other senior AFSC managers. Specifically, these two segments sought to determine the factors that had the most effect on the career decisions of the company grade officers. The first method used was across-person analysis. This analysis, which involves linear regression, although frequently discussed in the same context as Expectancy Theory, in reality has little or nothing to do with Vroom's (1964) precepts. As discussed by Lewis:

> In using regression much of the Expectancy Theory model is essentially discarded. The IV products are computed, then used directly as predictors in the regression model. This captures the interaction of instrumentality with valence, but eliminates any further consideration of the structure imposed by the Expectancy Theory model (1978, p. 72).

This segment involves, then, not an examination of the power or validity of an Expectancy Theory model, but rather an attempt to investigate the portion of variance in career intent that is explained by each instrumentality-valence product. Specific formulation for the forward inclusion linear regression was:

$$\text{Career Intent} = V_1 I_{AF,1} + V_2 I_{AF,2} + \cdots V_n I_{AF,n} \qquad (5)$$

where:

n = number of outcomes

V_n = respondent's valence for outcome n

$I_{AF,n}$ = instrumentality of an Air Force career for outcome n

To partially compensate for the fact that the outcomes selected for this research were interrelated, a bivariate

correlation was run between the career intent variable and each of the IV products. These correlations served to highlight an outcome which was strongly related to career intent but which had been neglected by the forward inclusion regression in favor of a slightly stronger but closely correlated IV product. It was determined that analysis of both of these statistical techniques would enable the researchers to highlight the critical outcomes.

In order to provide results that were of interest to AFSC command personnel, regressions and Pearson correlations were run selecting each of the following sample subgroups:

1. Each of the Air Force Specialty Codes reported
2. Male and female
3. Career Status (Regular/Career Reserve/Reserve)
4. Years of Commissioned Service (1 year increments)
5. Marital Status
6. Doctors of Medicine

Family's Influence. To provide AFSC with a more complete picture of the strength of a family's opinion in the career selection process, the External Pressure Analysis discussed above was reaccomplished. This model, the reader will recall, was designed to give special status to the force represented by a family's expectations or wants. This portion re-ran the regression model, built in the above segment for married individuals only. Further, each regression contained officers from only one year group. This procedure allowed researchers to observe the changing strength of the family term as the Air Force career progresses.

IV. Results

This chapter presents the results of the statistical analyses that were accomplished in this research. The first data are those which relate to survey reliability. Following this, the results produced in the data preparation and objective accomplishment phases described in Chapter III are presented. The order of presentation is the same as the methodological development of Chapter III. In several instances within this chapter, an acronym appears after the introduction of a variable. In the interest of brevity, this acronym is used in subsequent discussion of that variable and in accompanying tables and graphs. Additionally, a complete list of all acronyms and variable names used in this research documentation is presented in Appendix G.

Survey Reliability

As the reader will recall, once the survey had been administered twice to the test group, two methods were used to establish survey reliability. The first method involved the selection of all pairs of responses for a given question and then calculating a correlation between the first and second responses. When the results of this exercise were analyzed, it was observed that the correlation coefficients were extremely low. Most were less than .3. Further investigation indicated that the phenomenon of predominantly positive

or predominantly negative responses to most items was the cause of the problem. As discussed in Chapter III, for many survey items only three or four points at the high or low end of the 11-point scale were used. This apparent scale truncation effectively magnified the respondents' inability to replicate their first response during the second test administration. This, in addition, produced low correlation coefficients when, in fact, the difference between the first and second response, in many cases, was only one step on an 11-point scale. Faced with these findings, the researchers determined that the difficulty was one of psychometrics and not reliability and chose to discard this method.

The second reliability check discussed in Chapter III was successful. As described earlier, this method involved the selection of all data produced by a given person during both test administrations. A Pearson correlation coefficient was then calculated between the individuals' first and second responses to 56 of the survey items. Demographic data and the outcome importance ranking were not included in the correlation calculations. All remaining survey data from Parts II through IV were included in the analysis. The results of this method, which serve to establish the survey's reliability, are presented in Table V.

Descriptive Statistics

The descriptive statistics that were gathered to provide the researchers with an understanding of the distribution of

TABLE V

Bivariate Correlation - Individual's First and Second Response to Survey Instrument

Individual	Correlation Coefficient
1	.80
2	.81
3	.82
4	.83
5	.86
6	.87
7	.89
8	.88
9	.86
10	.84
11	.89
12	.89
13	.90
14	.87
15	.88
16	.85
17	.88

Note: In all cases $p \leq .001$
Mean of Correlation Coefficients = .86

the survey data are presented in Appendix E. In addition to the descriptive statistics for the raw survey data, values are also displayed for the computed variables: Hoppock Index (HOPPOCK), Rotter Index (ROTTER), and Service Index (SVINDX).

Analysis of the distribution of the responses indicated that sufficient data had been received to enable statistical analysis to be conducted for each of the previously planned sample subgroups. In addition, distribution of various demographic items were useful in determining whether the research sample was representative of the entire AFSC company grade officer population. Specifically, the percentage of the research sample which fell into various demographic bins was compared with data provided by HQAFSC which indicated the percentage of the entire population that fell in the bins. It was felt that if the percentages were similar for the sample and entire population, a representative subset had been used in the research. This comparison, which is also included in Appendix F, indicates that the sample was representative of the entire AFSC population. The sample used in the analyses consisted of 2103 company grade officers. Of these, 885 were lieutenants and 1215 were captains; 1932 were male and 167 were female; and 1514 were married while 581 were not married. A complete demographic profile is presented in Appendix E.

Career Intent

Investigation into the nature of the respondent-reported career intent variable (CAREER INTENT) was initiated by the

calculation of a series of Pearson correlation coefficients between CAREER INTENT and the following variables:

1. Frequency of thinking about leaving the Air Force (THINKING OF SEPARATING)
2. Participation in civilian job interviews (CIVILIAN JOB INTERVIEW)
3. Date of Separation Status (DATE OF SEPARATION)
4. Hoppock Job Satisfaction Index (HOPP)

It was anticipated by the researchers that if the model proposed by Mobley (1977) was valid, as individuals became more certain they were leaving the Air Force (CAREER INTENT decreased):

1. Frequency of thinking about leaving the Air Force would increase (THINKING OF SEPARATING variable would increase)
2. The individual would participate in civilian job interviews (CIVILIAN JOB INTERVIEW variable would increase)
3. The individual would move toward establishing a Date of Separation (DATE OF SEPARATION variable would increase).

Additionally, the researchers anticipated that as the individual's job satisfaction waned, his or her intention to leave the Air Force would get stronger (CAREER INTENT variable would increase). The results of these correlation calculations are shown in Table VI.

All of the anticipations of the researchers were confirmed,

TABLE VI

Bivariate Correlation-Career Intent
With Mobley Variables

	THINKING OF SEPARATING	CIVILIAN JOB INTERVIEW	DATE OF SEPARATION	HOPP
CAREER INTENT	-.59 (2096)	-.16 (2097)	-.35 (2088)	.33 (2063)

Note: $p \leq .001$ for all cases
Number in () is sample size for calculation
Differences in sample size are due to missing survey data.

although in some cases rather weakly, by these results. It can be inferred from this that the Mobley (1977) model does, at least to some extent, accurately represent the mechanics of the career decision process.

The final step in the investigation of the CAREER INTENT variable was a search for the point at which the "golden handcuffs" are in place. As described in Chapter III, this point is characterized as the point in a career when the variance in the CAREER INTENT variable approaches zero. To find this point in the research population, the variance of CAREER INTENT for one-year segments of the respondents was calculated. The yearly segments were formed using a service index (SVINDX) which, as earlier stated, was the sum of an individual's enlisted service, officer service and incurred commitment. The mean and variance of CAREER INTENT exhibited by each year's sample are shown in Table VII.

Analysis of these data led the researchers to conclude

TABLE VII

Mean and Variance of CAREER INTENT
by SERVICE INDEX

SERVICE INDEX (years)	Mean	Variance	Sub-Sample Size
4	3.88	3.16	152
5	3.95	2.78	456
6	3.74	3.64	156
7	4.21	3.71	133
8	4.53	3.50	144
9	4.94	3.09	143
10	5.08	3.27	155
11	5.17	3.24	184
12	4.99	3.69	148
13	5.56	2.83	80
14	5.93	2.34	68
15	6.27	1.43	66
16	6.25	1.68	36
17	6.96	.04	25
18	6.86	.12	29
19	6.95	.05	20
20	6.97	.03	29
21	6.78	.45	23

that the "golden handcuffs" were in place for all individuals with a Service Index of 17 years or greater. This determination led the researchers to delete the data collected from subjects who had a service index equal to or greater than 17 years from all subsequent analyses. This reduced the sample size to 1921.

Nature of the Expectancy Term

Investigation of the nature of the captured expectancy terms began with an examination of the variance exhibited by each of the five values: 1) Air Force Long Range (AFLNG), 2) Air Force Short Range (AFSRT), 3) Civilian Long Range (CVLNG), 4) Civilian Short Range (CVSRT) and 5) Rotter Index (ROTTER). These values, which are displayed in Table VIII along with the variables' means and standard deviations, indicate that while some variance does exist, it is small. This is especially true for the civilian terms which find a high percentage of the responses clustered around the upper end of the 100-point scale.

Following the variance study, which cast some doubt on the utility of the expectancy term, a factor analysis was conducted using all five expectancy terms. The results of the analysis using a VARIMAX rotated factor matrix are shown in Table IX. This factor analysis, like the two that follow used the λ_i rule described by Nie et al. (1975, p. 479) to determine the number of significant components to be retained in the final solution. The communality which appears in

TABLE VIII

Descriptive Statistics for Expectancy Terms

	AFLNG	AFSRT	CVLNG	CVSRT	ROTTER
Mean	81.0	79.2	89.1	87.3	4.8
Std Dev	22.7	24.3	14.6	17.6	3.0
Variance	517.0	591.6	213.0	310.4	9.0

TABLE IX

Factor Loadings from Factor Analysis of Expectancy Terms

	Communality	Factor One	Factor Two
AFLNG	.76	.86	.15
AFSRT	.76	.86	.14
CVLNG	.73	.25	.81
CVSRT	.79	-.01	.89
ROTTER	.19	-.43	-.02

Table IX represents the fraction of the variance in the expectancy variables which is captured by the retained factors.

It is apparent from these data that, while one factor is associated with the Air Force expectancy terms and a second provides a basis for the civilian terms, neither of the two factors is strongly associated with the Rotter index. These findings caused the researchers to question the underlying nature and utility of the Rotter index.

TABLE X

Factor Loadings from Factor Analysis of 15 Rotter Items

	Factor 1	Factor 2	Factor 3	Factor 4
VII1	.19	.57	.40	.05
VII2	.70	-.09	-.10	.17
VII3	.56	.13	.08	.05
VII4	.12	.13	.01	.66
VII5	-.12	.20	.68	.06
VII6	.55	.24	.26	-.07
VII7	.23	-.08	.69	.03
VII8	.35	.11	.55	.08
VII9	.52	.26	.13	-.05
VII10	.31	.63	.10	.05
VII11	.11	-.08	-.03	.71
VII12	-.06	.76	.01	.07
VII13	.31	.51	.28	.14
VII14	-.10	.16	.21	.57
VII15	.39	.23	.24	.12

Note: Variable names in the table correpond to question number in the survey

To further investigate the Rotter index, a factor analysis was accomplished for all 15 Rotter variables and on 12 of the 15 terms which, according to Rotter (1966), represented a generalized expectancy term. The results of these two factor analysis runs are presented in Tables X and XI. In these tables the individual Rotter variables are represented by VII1 through VII15. It is clear from these data that the Rotter variables do not have a single, strong latent factor as a foundation. Rather, the individual variables

TABLE XI

Factor Loadings from Factor Analysis of 12 General Rotter Items

	Factor 1	Factor 2	Factor 3
VII1	.57	.16	.07
VII2	-.06	.71	-.03
VII3	.13	.57	.10
VII5	.20	-.14	.67
VII6	.24	.55	.23
VII7	-.05	.18	.72
VII8	.13	.32	.57
VII9	.24	.54	.09
VII10	.65	.29	.10
VII12	.77	-.08	.00
VII13	.55	.27	.30
VII15	.28	.34	.29

Note: Variable names in table correspond to question number in the survey.

tend to associate themselves with several factors. Inspection of these data coupled with the results of the inter-expectancy term correlation analysis described next caused the researchers to delete the Rotter index from all subsequent data analyses.

The final step in the investigation of the nature of the expectancy terms was a Pearson correlation of each of the variables with the other expectancy variables. Results of this correlation are shown in Table XII. It should be noted that the correlation coefficients calculated in this run confirm the findings of the factor analysis which included all expectancy terms and also confirms the alien nature of the

TABLE XII

Intercorrelation of Expectancy Terms

	AFLNG	AFSRT	CVLNG	CVSRT	ROTTER
AFLNG	1.0				
AFSRT	.67 (2103)	1.0			
CVLNG	.42 (2103)	.38 (2103)	1.0		
CVSRT	.25 (2103)	.26 (2103)	.58 (2103)	1.0	
ROTTER	-.17 (1951)	-.18 (1951)	-.09 (1951)	-.08 (1951)	1.0

Note: $p \leq .001$ for all cases
Number in () is sample size for calculation

Rotter index and its lack of usefulness in this research. The utility of the remaining expectancy terms in Vroom's Expectancy Theory is discussed in the next section.

Expectancy, Its Utility

Once the underlying nature of the expectancy term had been investigated and the "golden handcuffs" point established, research was conducted into the utility of the expectancy value in Expectancy Theory. This study involved the use of the TOTAL FORCE/TOTAL VALENCE calculation introduced by Lewis (1978) and discussed in Chapter III, the sample which was not under the influence of the "golden handcuffs", and the Air Force and civilian expectancy terms previously mentioned. Specifically,

in this segment Total Force was calculated using Eq (3) with long-range expectancy terms (TOTALFL) and short-range terms (TOTALFS), and finally the Total Valence calculated with no expectancy term (TOTALV). The three terms were then correlated with the respondent-stated career intent. The results of this analysis are shown in Table XIII.

TABLE XIII

Correlation of CAREER INTENT with

TOTAL VALENCE and TOTAL FORCE Terms

	TOTALV	TOTALFL	TOTALFS
CAREER INTENT	.502	.484	.491
Note: $p \leq .001$ for all cases Sample size = 1872			

As can be seen from the values, the Total Valence term (TOTALV) which was calculated using no expectancy term produced the strongest correlation with CAREER INTENT. Faced with these data, the researchers were convinced that the expectancy values added nothing to the predictive power of the career intent models that used Expectancy Theory as their foundation. Therefore based on these findings, those of Lewis (1978) and others, and in the interest of parsimony, all expectancy term values were deleted from all subsequent analyses.

Outcome Importance

The final stage of the data preparation phase of this

project involved a further investigation into the subject of the optimum number of outcomes to be used in Expectancy Theory research. This study began by running SPSS COUNT to determine the number of times each of the second-level outcomes had been designated as one of the five most important or three least important outcomes in an individual's career decision process.

Upon completion of the outcome importance ranking, Eq (3) was again used to calculate three Total Valence terms. No expectancy terms were used as explained previously. A Total Valence was calculated using only the five most important outcomes (BST5TOTV), a second was computed using the eight most important outcomes (BST8TOTV), and a third Total Valence was computed with all 11 outcomes (TOTALV). Once this was complete, a Pearson product-moment coefficient was calculated between each of the Total Valence terms and CAREER INTENT. Again, as in the case of the expectancy term investigation, it was determined that the number of outcomes associated with the Total Valence which exhibited the strongest correlation with CAREER INTENT was the optimum number. The results of the Pearson correlations are shown in Table XIV. Based on these data, the researchers determined that 11 outcomes would be used for the remaining analyses.

Vroom's Model

At this point, as the reader will recall, the data preparation phase had determined: 1) no expectancy terms would be used, 2) 11 outcomes would be used in Total Valence

TABLE XIV

Bivariate Correlations - CAREER INTENT

With Total Valence Terms

	BST5TOTV	BST8TOTV	TOTALV
CAREER INTENT	.4737 (1904)	.4972 (1898)	.5017 (1872)

Note: $p \leq .001$ in all cases

Number in () is sample size for calculation

Difference in samples sizes is due to missing survey data.

calculations, and 3) only individuals with a Service Index less than 17 years were considered in the sample (n = 1921).

Once the data preparation phase was complete, the researchers moved to the accomplishment of the primary research objectives. The first segment in this phase involved testing the power of Vroom's (1964) model to predict career intent of the AFSC company grade officer population. To do this, Total Valence was again calculated using Eq (3). These within-person results were then correlated with the CAREER INTENT variable. The results of this analysis, shown in Table XIV, serve not only as an indicator of the power of Vroom's basic theory, but also as a standard against which the potency of subsequent models is measured. It is significant that these results compare very favorably with the Lewis (1978) correlation of TOTAL VALENCE with CAREER INTENT (r = .52, sample = 577). The only significant differences in the models were that Lewis

used 20 outcomes while this research effort had 11 second-level outcomes and that Lewis' sample had less than five years commissioned service.

External Pressure Analysis

The next step in the model formulation was the introduction of non-Expectancy Theory variables. These precepts, espoused by Fishbein (1967) and Graen (1969), advocated special statistical treatment for the force represented by the expectations of certain referrent others. This special attention is quantified by Eq (4). In this equation the previous calculation of a single Total Valence term is forsaken in favor of a linear regression which contains two terms: 1) a valence term calculated without the inclusion of the family opinion outcome (GTOTALV), and 2) a family opinion term (REFOTH1). As stated in Chapter III, the REFOTH1 variable was to be calculated by multiplying together two items (11 and 12) from Part IV of the survey. However, after the surveys were distributed, the researchers noted that the verbal anchors associated with Part VI, item 12 were in error. Inspection of the survey results indicated that this psychometric anomaly had caused some confusion among the research sample. To compensate for this, the researchers elected to use another survey item to capture the importance the individual assigned to the opinions of his or her spouse or immediate family toward the individual's Air Force career. The item that was substituted was item 10, Part II. The REFOTH1 term, therefore, became the product of

item 10, Part II and item 11, Part VI. In the opinion of the researchers, this difficulty had little or no impact on the quality of the REFOTH1 term. The results of the regression are shown in Table XV. While no straightforward statistical techniques known to the authors are available to calculate the increase in predictive power that is gained over Vroom's basic model by introducing Fishbein's precepts, observation indicates that the regression model is the stronger model. This was concluded, without rigorous statistical proof, by comparing the correlation coefficient generated by Vroom's basic model (.502) with the multiple correlation coefficient for the linear regression (.607). Clearly the force exerted by an individual's family or spouse is an important career determinant that deserves special consideration.

TABLE XV

Regression Values of CAREER INTENT

With External Pressure Model

Variable	F to enter	Multiple R	Simple r
GTOTALV	259.46	.473	.473
REFOTH1	426.41	.607	.530
Sample size for calculations = 1851			

Mobley Analysis

After determination of the validity of the Fishbein (1967) model described above, the research continued with the introduction of a time dimension to the career decision process.

TABLE XVI

Regression Values of CAREER INTENT
with Mobley Model Variables

Variable	F to enter	Multiple R	Simple r
REFOTH1	470.60	.530	.530
GTOTALV	117.82	.608	.473
HOPP	103.69	.635	.353
Sample size for calculation = 1851			

This was accomplished, as discussed in Chapter III, by using the valence calculated in the Fishbein model described above to represent the future orientation and Hoppock's (1935) Job Satisfaction Index to represent present attractiveness. The resultant linear regression model contained CAREER INTENT as the criterion variable and Total Valence generated without the family opinion outcome (GTOTALV), the external pressure term (REFOTH1) and the Hoppock Index (HOPP) as the predictor variables. The results of this forward inclusion regression are shown in Table XVI.

These results, in reality, demonstrate the contribution of the Job Satisfaction item to the task of explaining the variance exhibited in CAREER INTENT. It is noted from the results that once a model has been formulated with the GTOTALV and REFOTH1 terms, a small but statistically significant (F = 103.69, significance = .000) amount of explanatory power is gained by addition of a job satisfaction term. (Information relating to the intercorrelations that exist among the three

predictor variables can be found in Appendix I.) This operationalization of the Mobley (1979) model is then the most potent developed thus far in this research project.

Changing Factor Importance

The development of the Mobley (1979) model that was just discussed was the final model constructed and tested in this research. The purpose of this segment, the reader will recall, was to use the previously discussed Mobley model to determine the changing importance of the temporal factors which go into the career decision process. This was accomplished by formulating a linear regression model which contained a present term and a future term. The present variable was again job satisfaction (HOPP), while the future term was represented by the GTOTALV and REFOTH1 values from the non-Expectancy Theory variables analysis. The future terms were forced into a hierarchical inclusion first, followed by the present HOPP term. Table XVII presents the results of 12 forced hierarchical inclusion regression runs by years of commissioned service.

The results shown in Table XVII do indicate that the importance of the variables does change as the years of commissioned service increases. Most notable is that the HOPP variable adds less than six percent to the variance explained by the model in each year group. It is difficult, however, to identify any trends with respect to traditional career decision points found in a military career. Perhaps this ambiguity is due to the oversimplification of the "present value discounting"

TABLE XVII

Regression Values of Career Intent With Anticipated Attraction and Job Satisfaction by Years of Commissioned Service (TAFCS)

Variable	Change in R^2	Multiple R
TAFCS = 1 (n = 399)		
ATTRAC	.409	
HOPP	.030	.662
TAFCS = 2 (n = 218)		
ATTRAC	.456	
HOPP	.043	.706
TAFCS = 3 (n = 186)		
ATTRAC	.375	
HOPP	.009	.619
TAFCS = 4 (n = 110)		
ATTRAC	.473	
HOPP	.028	.707
TAFCS = 5 (n = 100)		
ATTRAC	.450	
HOPP	.027	.691
TAFCS = 6 (n = 107)		
ATTRAC	.302	
HOPP	.059	.664
TAFCS = 7 (n = 99)		
ATTRAC	.353	
HOPP	.028	.618
TAFCS = 8 (n =124)		
ATTRAC	.493	
HOPP	.024	.719
TAFCS = 9 (n = 121)		
ATTRAC	.279	
HOPP	.050	.574
TAFCS = 10 (n = 157)		
ATTRAC	.305	
HOPP	.063	.607
TAFCS = 11 (n = 153)		
ATTRAC	.291	
HOPP	.010	.549
TAFCS = 12 (n = 65)		
ATTRAC	.307	
HOPP	.034	.584

Note: abbreviations in Appendix G

AD-A083 712 AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOO--ETC F/G 5/9
AN INVESTIGATION OF THE FACTORS WHICH AFFECT THE CAREER SELECTI--ETC(U)
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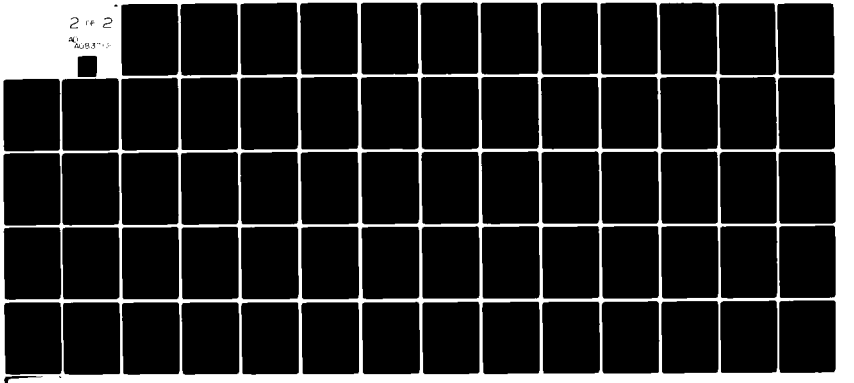

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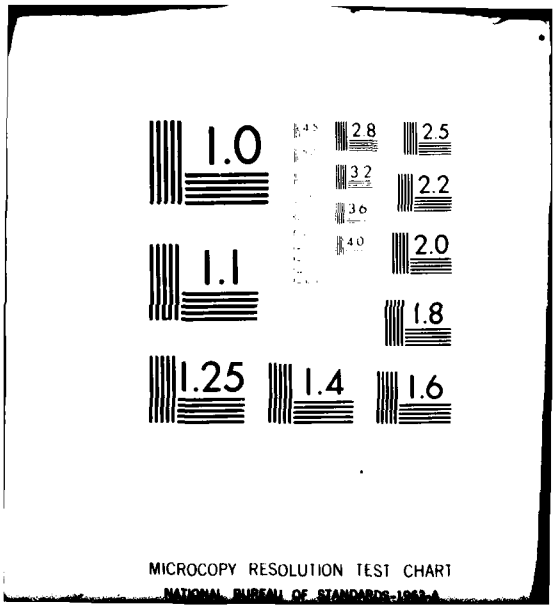
1.0
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

the individual is hypothesized to be accomplishing; perhaps it is due to a more mundane psychometric problem. Whatever the case, the results of this segment were not conclusive.

Across-Person Analysis

The purpose of this analysis as described in Chapter III was to determine which of the 11 outcomes used in the research had the most effect on the career decisions of the AFSC company grade officers. Specifically, this segment sought to produce data that would be useful to Dr. Bernard Kulp or other senior AFSC managers. The analysis relied on two different statistical techniques in assigning an importance rating to the outcomes. The first was a linear regression, discussed thoroughly in Chapter III, which used each of the 11 Air Force instrumentality valence products as the predictor variables and respondent-stated CAREER INTENT as the criterion. Further, to compensate for the interdependence that existed among the outcomes (see Appendix I, Table XXV), bivariate correlations were calculated between the CAREER INTENT variable and each of the instrumentality-valence products. This analysis was accomplished for the entire sample and for each of the following population subgroups:

1. Each of the Air Force Specialty Codes reported
2. Male and Female
3. Career Status (Regular/Career Reserve/Reserve)
4. Marital status
5. Doctors of Medicine

Due to the large volume of results produced by this segment of the analysis, only data for the entire sample are presented in this chapter (Table XVIII). The remaining data are presented in Appendix H.

In order to aid the reader in interpreting these data, Table XIX is included. This table provides an explanation of the acronyms associated with each outcome. Additionally, the following explanation is provided for the column headings that appear in Table XVIII and Appendix H:

1. VARIABLE - the second-level outcome whose instrumentality-valence product went to make up that regression variable.
2. F to Enter - the F statistic used to test the hypothesis that the β associated with that predictor variable is zero or other than zero. As a rough rule of thumb, F values larger than 4.0 indicate that the β weight is other than zero. In all forward inclusion regressions in this research, the F value had to be greater than .01 before the variable was allowed to enter the regression.
3. Multiple R - the multiple correlation coefficient of the model after the predictor variable in that line has been entered.
4. Simple r - the bivariate correlation between the variable in that line and the criterion variable.

In analyzing the voluminous output from this segment, it would be possible to consider each of the sample subgroups

TABLE XVIII

Regression/Correlation Values of
CAREER INTENT With Air Force IV Products

VARIABLE	F to Enter	Multiple R	Simple r
JBCHL	328.66	.38	.38
FAMLY	170.24	.47	.37
DSPLN	76.00	.50	.30
RETIR	45.82	.51	.24
UTLIZ	32.89	.53	.36
RELOC	22.49	.53	.24
PRMOT	11.12	.54	.30
UPROT	8.25	.54	.11
HISAL	2.45	.54	.20
SRPTN	.96	.54	.05
RECOG	.47	.54	.26

and to formulate interesting hypotheses from the data. This would, however, result in an extended discussion, a large variety of unsubstantiated hypotheses, and few concrete, irrefutable conclusions. To avoid this, only general observations concerning the sample as a whole and specific segments of the sample are made. These are presented in Chapter V.

Spouse's Influence - By Year Group

The final results discussed were produced to shed further light on the strength of the external pressure term that

TABLE XIX

Outcome Definitions

Outcome	Definition
HISAL	Earning a high salary
PRMOT	Promotion based on job performance
JBCHL	An interesting, challenging job
DSPLN	Set uf rules and regulations governing behavior
RETIR	Twenty-year retirement
RELOC	Relocations every four years or less
RECOG	Recognition of achievement and accomplishments
UTLIZ	Effective use of abilities and training
SRPTN	Extended separation from family and friends
FAMLY	Favorable attitude on the part of spouse or immediate family regarding career
UPROT	The requirement to attain positions of increased rank and responsibility in order to remain a member of the organization

operationalized the Fishbein precept concerning forces introduced by referrent others. This analysis sought to determine how the strength of this term to predict career intent changed as an individual's career progressed. Using married officers only, the data are presented by years of commissioned service. The GTOTALV term represents the force generated by all outcomes other than the spouse's favorable opinion; the REFOTH1 variable represents the motivation to comply with the spouse's

expectations. The results of this linear regression are presented in Table XX.

Once again, the data indicate that the importance of the REFOTH1 term does change as an Air Force career progresses. While it was felt to be counterproductive to attempt to explain the values associated with each year group, one general comment is apropos. The importance of the spouse's favorable opinion toward the Air Force is greatest during the early stages (first five or six years) of an Air Force officer's career.

TABLE XX

Regression Values of CAREER INTENT with External Pressure Model Terms by Years of Commissioned Service (TAFCS) (Married Only)

Variable	F to Enter	Multiple R	Simple r
TAFCS = 1 (n = 204)			
GTOTALV	45.74	.55	.55
REFOTH1	72.91	.70	.61
TAFCS = 2 (n = 128)			
GTOTALV	26.51	.53	.53
REFOTH1	64.51	.73	.65
TAFCS = 3 (n = 118)			
GTOTALV	15.12	.57	.57
REFOTH1	18.25	.64	.58
TAFCS = 4 (n = 76)			
GTOTALV	19.45	.47	.47
REFOTH1	57.97	.75	.67
TAFCS = 5 (n = 72)			
GTOTALV	13.78	.60	.60
REFOTH1	21.03	.71	.64
TAFCS = 6 (n = 83)			
GTOTALV	10.63	.52	.52
REFOTH1	35.80	.70	.65
TAFCS = 7 (n = 86)			
GTOTALV	25.11	.53	.53
REFOTH1	12.08	.61	.43
TAFCS = 8 (n = 109)			
GTOTALV	31.44	.57	.57
REFOTH1	36.13	.70	.59
TAFCS = 9 (n = 102)			
GTOTALV	18.53	.50	.50
REFOTH1	9.03	.56	.43
TAFCS = 10 (n = 134)			
GTOTALV	9.61	.40	.40
REFOTH1	35.14	.58	.54
TAFCS = 11 (n = 138)			
GTOTALV	13.66	.45	.44
REFOTH1	24.63	.57	.50
TAFCS = 12 (n = 55)			
GTOTALV	7.58	.51	.51
REFOTH1	4.73	.56	.47

Note: Abbreviation in Appendix G

V. Summary and Conclusions

The primary purpose of this research was to identify and analyze the specific perceptions and attitudes which are associated with an individual's career selection decision. Previous research accomplished by Logan M. Lewis (1978) indicated that a decision model based on Victor Vroom's (1964) Expectancy Theory provided one of the best explanations of variance in career turnover. Vroom's original equations describing an individual's preference for alternative careers were, therefore, tested and used as a basis for comparison with two more complex models of turnover. Data for this analysis were collected using a questionnaire which was adapted from Lewis' survey instrument and distributed to all company grade officers in Air Force Systems Command. Responses were returned by 2200 individuals for a response rate of 51 percent.

The data gathered through the questionnaire were subjected to extensive analyses using the Statistical Package for the Social Sciences on a CDC 6600 computer. The conclusions resulting from these data analyses are summarized in this chapter. These findings are presented as they relate to the original objectives of the thesis. The chapter concludes with recommendations for future research.

Findings Related to Objectives

The first objective was to determine the power of Vroom's (1964) Expectancy Theory in predicting career intentions. To accomplish this goal, it was first necessary to examine two methodological questions unanswered in Lewis' original thesis: What is the optimum number of outcomes to use in the model and whether or not the expectancy component of the formula is valid.

Data analysis using either the five or eight most important outcomes as reported by the respondents failed to improve the bivariate correlation between the calculated occupational preference and the reported career intention. All eleven outcomes addressed in the survey were, therefore, used in the remaining analysis. It is notable that this approach is in consonance with findings by Schwab et al. that "less variance is explained in studies with 9 or less outcomes" (1979, p. 144).

Lewis (1978) discarded the expectancy component in his analysis of Vroom's theory citing psychometric problems with his instrument. This study analyzed separate long and short range measures of expectancy and Rotter's (1966) measure of internal versus external control to obtain a psychometrically valid expectancy term. Although both the short- and long-term measures correlated with the Rotter measure as hypothesized, neither significantly improved the model in an across-person analysis. This finding is consistent with those of other authors who have reported inconclusive support for the

expectancy component. The expectancy term was, therefore, dropped and Vroom's preference model used in the remaining analyses.

The ability of Vroom's preference model to predict career intent was examined using the within-person test. This test consisted of correlating the career preference score with the career intent criterion. A correlation coefficient (r) of .502 ($p \leq .001$) was obtained, which compares favorably with that obtained with Lewis' total sample ($r = .52$; $p \leq .01$) and those of other authors (see Table I). This high correlation also supported the original methodological decision to reduce the number of outcomes from the 20 used by Lewis to 11 used in this study.

The second major objective was to compare Vroom's preference model with a model which adds a separate external pressure term similar to an equation proposed by Graen (1969). The external pressure term was defined as the force exerted on an individual to comply with the perceived expectations of others. A bivariate correlation of career intent and Vroom's preference model with all 11 outcomes was accomplished. A two-term regression was then accomplished using the preference model, replacing the family opinion outcome with a separate but similar external pressure as formulated by Graen (1969). The multiple correlation coefficient for the latter equation ($R = .608$) dramatically exceeded the bivariate correlation of the former ($r = .502$). There is a dearth of statistical tools available to examine the significance of the difference between

regression equations with different variables; however, the magnitude of the change suggests the two-variable equation is a more effective model.

The third objective was to examine the changing relationship between current job satisfaction and the anticipated attraction of job alternatives as they affect the turnover decision. This was accomplished by operationalizing a model suggested by Mobley et al. (1979) using the Hoppock (1935) job satisfaction measure and Vroom's preference model as modified above. It is important to note that the addition of job satisfaction to the preference model (with a separate external force term) resulted in an increase in the multiple correlation coefficient ($R = .635$), which was statistically significant ($p \leq .0001$). Attempts to identify possible trends in the relationship between job satisfaction and anticipated attractiveness were, however, inconclusive.

The last major objective was to identify, through the use of Expectancy Theory, the factors that are most closely related to the retention and turnover of AFSC company grade officers. The within-person model assumed equal importance (weighting) between all second-level valences. To accomplish the second objective, an across-person model was, therefore, used to examine the strength of association of the Air Force Instrumentality-Valence (IV) products with the career intent criterion. Both the significance of the IV products in the across-person regression and their bivariate correlations with career intent were examined to identify possible trends

by years of commissioned service, specialty code (AFSC), sex, marital status, and career status (see Appendix H).

The analysis by years of commissioned service provided the most useful information. It was noted that the importance of family opinion (FAMLY) was consistently one of the three most important factors in the first six years and was moderately important thereafter. Job challenge (JBCHL) was also a consistently high factor for the first six years, after which utilization of training and ability (UTLIZ) became the single dominant factor. Enforcement of standards (DSPLN) was also one of the three most important factors during the first three years, and again during years seven through ten. There was comparatively low correlation between promotions based on ability (PRMOT) and career intentions during the first three years, but it became the single most important factor at year four and remained moderately to highly important thereafter. It was also notable that a high salary (HISAL) was only moderately important and the "up or out" concept (UPROT) was never significant in the regression model. Analysis of the other groupings revealed no significant trends; however, job challenge, utilization of abilities, and family opinion were consistently among the five most important outcomes, with job challenge usually first.

Discussion of Results

The statistically significant improvement in predictive power obtained by adding separate terms for external pressure

(per Graen, 1969) and current job satisfaction (per Mobley et al., 1979) to Vroom's preference model suggests a deficiency in using only Vroom's equations to model career turnover. In a practical sense, however, there appears to be little value in adding a separate term, job satisfaction, which only increases the predictive power of the model three percent. Further, Vroom's preference model explained the largest portion of the variance in career intention of the three aforementioned variables examined in this study. This fact emphasizes the value of using Vroom's theory to examine other outcomes which are relevant to the career selection decision.

The findings of the analyses of relevant outcomes, using Vroom's theory, accomplished during this research warrant further discussion. First, the overall importance of family opinion in general and spouse's opinion in particular during the first six years of commissioned service imply a relatively unexplored method for improving retention. Improving family preference for an individual to pursue an Air Force career may significantly improve retention. Second, although the change in importance between job challenge and utilization of abilities at about year six is noteworthy, it is important to recognize the high intercorrelation between the two ($r = .49$; $p \leq .001$). Because of this intercorrelation, once one of the variables has entered the across-person regression, the apparent strength of the second variable in the model is substantially reduced even though both are significant to the respondents. It is also important to recognize that the

dominance of job challenge in the total sample is due to its overwhelming significance to younger officers who comprise the biggest portion of the total sample (see Appendix E). Third, the predominance of a negatively valent outcome, enforcement of standards, in the years prior to the career decision points at four and eleven years suggests it is a significant irritant strongly affecting career decisions.

Other outcomes have statistically little effect on the career decision. A notable exception is that the outcome, promotions based on ability, was dominant at the promotion selection points as might be expected. Other outcomes which might also seem intuitively important, such as a 20-year retirement or high salary, had only moderate to low significance. In contrast, in excess of 20 percent of the 291 respondents who added personal comments indicated pending Presidential and Congressional actions in these areas might dramatically change this relationship. Lastly, it was particularly notable to the authors that the outcome concerning "up or out" policy was never significant in the model since it was originally hypothesized that this factor would increase in importance near the Major selection point.

Implications for Further Research

In designing the questionnaire for this research, particular emphasis was placed on developing an appropriate measure of the expectancy component of Vroom's theory. The failure of this variable to improve the predictive power of

the preference model adds to the growing evidence that Vroom's choice model is either wrong or has been consistently misinterpreted. It would be desirable to formulate a testing methodology to examine this specific component. This suggestion is consistent with Mitchell's observation that "our empirical tests are inaccurate representations of the overall theory. Our measures do not reflect the underlying theoretical components" (1974, p. 39).

In a similar vein, this research identified a potential psychometric problem. Beyond the 17-year point, as measured using the service index, variance in career intent approached zero. This phenomena was predicted due to the "golden handcuffs" effect; however, correlation of the expectancy model with career intent also dropped dramatically at this point. Hypothetically, the model should have accommodated the dominance of the retirement term. This discrepancy suggests that the measurement scales used did not provide sufficient range to account for the difference in desirability of the outcome. In a like manner, other single outcomes which might dominate an individual's decision could be misinterpreted due to erroneous measurement techniques. Other authors have drawn similar conclusions, suggesting that ". . . the theory has become so complex that it has exceeded the measures which exist to test it" (Lawler and Suttle, 1973, p. 502). Such questions and problems can only be resolved by changing the emphasis of research from extending the model to exploring the components and their interaction by developing valid and reliable measures.

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APPENDIX A

Tasking Letter

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE SYSTEMS COMMAND
ANDREWS AIR FORCE BASE, DC 20334

30 January 1979

Captain Michael Stahl
AFIT/ENS
Wright-Patterson AFB OH 45433

Dear Captain Stahl

My office is extremely concerned about the current blue suit S&E shortages and recruiting problems the Air Force, and particularly AFSC, is facing and is expected to face in the future. AFSC presently has 1400 vacancies in the rank of Captain alone, and as a consequence is concerned about the reasons for this obvious retention dilemma. It has come to my attention that a thesis student of yours, Captain Lewis, recently conducted a study aimed at predicting the degree of association between personal expectations and career choice of S&E technical officers between zero and four years active duty in the Air Force vs the private sector.

I feel this approach should be extended to analyze the attitudes and reasons for career selection retention problems for the entire company grade population of AFSC. My assistant, Major Fehrenbacher, has received the agreement of Captain George "Dave" Davidson, Chairman of the AFSC Headquarters Company Grade Officers Council, to act as focal point in assuring that the survey is distributed and completed by all company grade officers in the Command. I hope that the survey can differentiate between the expectations of those officers who are definitely staying, definitely leaving, and those who are undecided. If you are able to accommodate my request, I plan to have the results of said thesis briefed at the highest AFSC and Air Force levels.

Sincerely

BERNARD A. KULP
Chief Scientist
Director of Science and Technology

APPENDIX B

Survey Cover Letters

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (ATC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

REPLY TO ATTN OF: AFIT/LSS (Prof. Michael J. Stahl, 54549)

SUBJECT: Survey Concerning Attitudes Toward Career Choice (USAF SCN 79-121)

TO: AFSC Company Grade Officers

1. I am the thesis advisor for Capts Mosbach and Scanlan who are researching career choice for a Master's thesis via the attached questionnaire. The questionnaire is designed to survey attitudes of military members toward career choice, especially the company grade officers of Systems Command. Would you please help us in our research by completing the attached questionnaire?

2. We are attempting to survey all company grade officers in AFSC. This effort is being supported by Dr. Bernard A. Kulp, Chief Scientist AFSC, who has indicated that the results will be provided to senior level AFSC managers. We, therefore, have every reason to believe that this effort will have some positive impact on the management of the careers of company grade officers.

3. When you complete the questionnaire, place it in the envelope provided and return it to your CGOC representative or place it in the mail. Either way, your responses will be strictly anonymous. Only Capts Mosbach, Scanlan and I will have access to the data. If you would like a summary of the research and its findings, please include a request with the questionnaire when you return it or send a separate request to the address shown on the attached envelope. The summary should be in the mail in the Nov/Dec timeframe. We hope it will serve to partially compensate you for your assistance. Thank you very much for helping us with our research.

Michael J. Stahl

MICHAEL J. STAHL, Ph.D.
Assoc Prof of Management
Dept of Organizational Sciences
School of Systems and Logistics

2 Atch
Letter from Capts Mosbach and Scanlan
Questionnaire

1 Encl
Return Envelope

Strength Through Knowledge

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (ATC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

Dear Survey Respondent:

We are writing to request your assistance in a research project. This effort is important not only because it is a major step towards fulfilling our AFIT Master's degree requirements, but also because it offers you the opportunity to express your feelings about Air Force life to senior AFSC managers. The basic tool to be used in our research is Expectancy Theory, formulated by Victor H. Vroom in 1964. The questionnaire that we are asking you to complete was designed to conform to the precepts of this theory.

Quite frankly, the success of our research depends, almost entirely, upon your voluntary participation. In order for us to produce statistically significant results that are "typical" of the company grade officers of Systems Command, we need a high response rate. We cannot succeed without your cooperation and that of your fellow AFSC company grade officers.

All responses to this questionnaire will be strictly anonymous. Absolutely no attempt will be made to determine names, social security numbers or other personal information about the respondents. Further, research data will be analyzed and reported as group tabulations and not as individual responses.

In order to guarantee this anonymity, we have provided a self-addressed envelope with each questionnaire. When you have completed the questionnaire, place it in the envelope and return it to your CGOC representative or drop it in the mail. The representatives have been instructed to forward the unopened envelopes directly to us. Postage for the mailed responses will be provided via postage meter either at your base or here at Wright-Patterson if your base has no metering system.

Once again we would like to emphasize that your cooperation is urgently needed and appreciated.

Thank you for your help.

Richard J. Mosbach
Capt, USAF
Master's Degree Candidate
AFIT School of Engineering

Thomas J. Scanlan, Jr.
Capt, USAF
Master's Degree Candidate
AFIT School of Engineering

APPENDIX C

Survey Questionnaire

PRIVACY STATEMENT

In accordance with paragraph 8, AFR 12-35, the following information is provided as required by the Privacy Act of 1974:

a. Authority

(1) 5 U.S.C. 301, Departmental Regulations: and/or

(2) 10 U.S.C. 80-12, Secretary of the Air Force, Powers and Duties, Delegation by.

b. Principal purposes. The survey is being conducted to collect information to be used in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine uses. The survey data will be converted to information for use in research of management related problems. Results of the research based on the data provided, will be included in written Master's thesis and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or orally presented, will be unlimited.

d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who elects not to participate in any or all of this survey.

USAF SCN 79-121
Expires July 1980

EXPECTANCY MODEL OF CAREER CHOICE QUESTIONNAIRE

Introduction

The purpose of this survey is to gather data to test the predictive powers of Expectancy Theory in relation to job choice. The choice under consideration is whether to pursue a career in the Air Force or to separate and establish a career as a civilian. The bulk of the questionnaire centers around 11 possible outcomes, referred to as "Career-related Outcomes", that you might attain from whatever career you may choose. In order to establish some comparability between military and civilian careers, we have defined "career" rather narrowly. Throughout the questionnaire the two career possibilities will be defined as follows:

> Air Force Career - Reaching retirement eligibility (20 years of active duty) without being involuntarily separated.
>
> Civilian Career - An equivalent civilian career is considered to be attaining a position equivalent to an Air Force middle manager (O-4 or O-5) within 20 years.

Because of the nature of the expectancy model, it is extremely important for you to answer all the questions. If you encounter a question that does not seem to apply to you, please select the answer that seems most appropriate. Please check the questionnaire over after you finish to insure that no questions have been left unanswered.

Feel free to note any comments that occur to you as you answer the questions. Your cooperation in completing this questionnaire is greatly appreciated.

- PART I -

In answering the following questions about yourself, please circle or fill in the appropriate response.

1. What is your present grade?

   A. 2nd Lt B. 1st Lt C. Capt

2. What is the length of your total active commissioned service? _____ years

3. Did you serve in an enlisted status prior to being commissioned?

   A. Yes B. No

4. If you were prior-enlisted, please indicate the number of years you served as enlisted.

   _____ years

5. When does your active duty service commitment expire?

   A. No active duty service commitment
   B. In less than 1 year
   C. In greater than 1 year but less than 2 years
   D. In greater than 2 years but less than 3 years
   E. In greater than 3 years

6. Have you separated from the service and then returned to active duty?

   A. Yes B. No

7. What is your highest level of education?

   A. Bachelor's Degree
   B. Bachelor's Degree and some graduate work
   C. Master's Degree
   D. Master's Degree and some postgraduate work
   E. Doctorate

8. What is the source of your commission?

   A. ROTC B. Military Service Academy C. OTS

9. What is your sex?

   A. Female B. Male

10. Please circle the Air Force Specialty Code for your career field (your duty AFSC).

    A. 10xx-15xx E. 51xx
    B. 26xx F. 55xx
    C. 27xx G. 65xx
    D. 28xx H. Other

11. What is your career status?

    A. Regular B. Career Reserve C. Reserve

12. Which of the following better describes your marital status?

    A. Married B. Unmarried

- - - - - - - - - - - - - - - - - - - PART II -

This section consists of a list of the 11 Career-related Outcomes mentioned previously. Consider each outcome separately and decide how desirable or undesirable it would be to attain that outcome as a result of your career. In this section, please consider the outcomes independently of any specific career.

Indicate your desirability of attaining each outcome by circling the appropriate number on the scale following the outcome. The scale ranges from EXTREMELY UNDESIRABLE to EXTREMELY DESIRABLE with the midpoint (0) indicating that you are INDIFFERENT to the outcome. To be specific, DESIRABLE is taken to mean how much you would like to experience an outcome, and UNDESIRABLE means how much you would dislike experiencing it.

1. Earning a high salary

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE					INDIFFERENT					EXTREMELY DESIRABLE

2. Promotions based on your job performance

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE					INDIFFERENT					EXTREMELY DESIRABLE

3. An interesting and challenging job

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE					INDIFFERENT					EXTREMELY DESIRABLE

4. A set of rules and regulations governing personal behavior in such areas as dress and appearance and associations with other members of the organization.

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE					INDIFFERENT					EXTREMELY DESIRABLE

5. A 20-year retirement program with a monthly pension of 40% of your total salary (This would be equivalent to approximately 50% of your base pay in the Air Force. By expressing it this way, comparisons between military and civilian pensions can be made.)

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE					INDIFFERENT					EXTREMELY DESIRABLE

6. Permanent relocations every four years or less

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE					INDIFFERENT					EXTREMELY DESIRABLE

7. Recognition of your achievements and accomplishments by your organization

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE					INDIFFERENT					EXTREMELY DESIRABLE

8. Effective use of your abilities and training by your organization

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE					INDIFFERENT					EXTREMELY DESIRABLE

9. Extended separation from your immediate family (if married) or from home and friends (if unmarried)

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE					INDIFFERENT					EXTREMELY DESIRABLE

10. A favorable attitude on the part of your spouse (if married) or immediate family (if unmarried) regarding your career

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE				INDIFFERENT						EXTREMELY DESIRABLE

11. The requirement to attain positions of increased rank and responsibility in order to remain a member of your organization

-5	-4	-3	-2	-1	0	1	2	3	4	5
EXTREMELY UNDESIRABLE				INDIFFERENT						EXTREMELY DESIRABLE

- PART III -

The following statements concern the degree to which you perceive the 11 Career-related Outcomes are associated with (i.e., provided by) an Air Force career.

Following each statement, please circle one of the 11 responses on the scale ranging from COMPLETELY DISAGREE to COMPLETELY AGREE that best describes the extent of your agreement or disagreement with the statement. The midpoint of the scale (0) indicates that you are UNDECIDED or have NO OPINION about the correctness of the statement and its implied association.

1. An Air Force career will provide you with a high salary.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE				UNDECIDED						COMPLETELY AGREE

2. Promotions are based on job performance in the Air Force.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE				UNDECIDED						COMPLETELY AGREE

3. A career in the Air Force provides interesting and challenging jobs.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE				UNDECIDED						COMPLETELY AGREE

4. In the Air Force, you will be subject to a set of rules and regulations governing personal behavior in areas such as dress and appearance and associations with other members of the organization.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE				UNDECIDED						COMPLETELY AGREE

5. You will be able to retire from the Air Force after 20 years service with a monthly pension of 40% of your total salary (equivalent to approximately 50% of your base pay).

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE				UNDECIDED						COMPLETELY AGREE

6. During an Air Force career, you will make a permanent relocation every four years or less.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

7. The Air Force recognizes the achievements and accomplishments of its members.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

8. Effective use will be made of your abilities and training throughout an Air Force career.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

9. Extended separation from your immediate family (if married) or from home and friends (if unmarried) is one aspect of an Air Force career.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

10. Your spouse (if married) or your immediate family (if unmarried) has a favorable attitude regarding you having an Air Force career.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

11. An Air Force career will require you to attain positions of increased rank and responsibility in order to remain a member of that organization.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

- PART IV -

The following statements concern the degree to which you perceive the 11 Career-related Outcomes are associated with (i.e., provided by) a civilian career.

Following each statement, please circle one of the 11 responses on the scale ranging from COMPLETELY DISAGREE to COMPLETELY AGREE that best describes the extent of your agreement or disagreement with the statement. The midpoint of the scale (0) indicates that you are UNDECIDED or have NO OPINION about the correctness of the statement and its implied association.

1. A civilian career will provide you with a high salary.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

2. Promotions are based on job performance in a civilian career.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

3. A career as a civilian provides interesting and challenging jobs.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

4. In a civilian career you will be subject to a set of rules and regulations governing personal behavior in areas such as dress and appearance and associations with other members of the organization.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

5. In a civilian career you will have a retirement program that offers a 20-year retirement with a monthly pension of 40% of your total salary.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

6. During a civilian career, you will make a permanent relocation every four years or less.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

7. A civilian organization recognizes the achievements and accomplishments of its members.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

8. Effective use will be made of your abilities and training throughout a civilian career.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

9. Extended separation from your immediate family (if married) or from home and friends (if unmarried) is one aspect of a civilian career.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

10. Your spouse (if married) or your immediate family (if unmarried) has a favorable attitude regarding you having a civilian career.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

11. A civilian career will require you to attain positions of increased rank and responsibility in order to remain a member of your organization.

-5	-4	-3	-2	-1	0	1	2	3	4	5
COMPLETELY DISAGREE					UNDECIDED					COMPLETELY AGREE

- PART V -

The following questions require you to estimate the probabilities of completing (1) an Air Force career should you remain in the Air Force, and (2) a civilian career (as defined in the question) should you get out of the military. Please indicate your response by circling one of the 11 probabilities ranging from 0% to 100% on the scale following each question.

1. What do you think is your chance of being able to make a career of the Air Force (i.e., reach retirement eligibility by completing 20 years of service) should you attempt it?

NO CHANCE It will be impossible for me to complete such a career if I attempt it.	0%	10	20	30	40	50	60	70	80	90	100%	CERTAINTY Without any doubt, if I attempt such a career, I will be successful.

2. What do you think is your chance of being able to make a civilian career (i.e., attain a position at least equivalent in salary and responsibility to an Air Force middle manager [O-4 or O-5] within 20 years) if you attempt it?

NO CHANCE It will be impossible for me to complete such a career if I attempt it.	0%	10	20	30	40	50	60	70	80	90	100%	CERTAINTY Without any doubt, if I attempt such a career, I will be successful.

3. What do you think is your chance of being selected for promotion to Major if you attempt it?

NO CHANCE It will be impossible for me to get promoted to Major if I attempt it.	0%	10	20	30	40	50	60	70	80	90	100%	CERTAINTY Without any doubt, if I attempt to get promoted to Major, I will be successful.

4. What do you think is your chance of being hired in a civilian position (with pay, benefits, duties, responsibilities and opportunities for advancement comparable with your present job) if you attempt it?

NO CHANCE It will be impossible for me to get a civilian job if I attempt it.	0%	10	20	30	40	50	60	70	80	90	100%	CERTAINTY Without any doubt, if I attempt to get a civilian job, I will be successful.

PART VI

The following are general questions concerning your feelings about the Air Force and your present job. For the purposes of this survey, the term "job" is defined as your specific position within the USAF (e.g. development engineer at ASD) and not your occupation of USAF officer.

1. Please circle the FIVE (5) career-related outcomes which have the most bearing (positive or negative) on your career selection decision.

   A. Earning a high salary
   B. Promotions based on job performance
   C. An interesting and challenging job
   D. A set of rules and regulations governing personal behavior in areas such as dress and appearance and associations with other members of the organization
   E. A 20-year retirement program with a monthly pension of 40% of your total salary (equivalent to approximately 50% of your base pay)
   F. Permanent relocation every four years or less
   G. Recognition of your achievements and accomplishments by your organization
   H. Effective use of your abilities and training by your organization
   I. Extended separation from your immediate family (if married) or home and friends (if unmarried)
   J. A favorable attitude on the part of your spouse (if married) or immediate family (if unmarried)
   K. A requirement to attain positions of increased rank and responsibility in order to remain a member of your organization

2. Please circle the THREE (3) career-related outcomes which have the least bearing on your career selection decision.

   A. Earning a high salary
   B. Promotions based on job performance
   C. An interesting and challenging job
   D. A set of rules and regulations governing personal behavior in areas such as dress and appearance and associations with others members of the organization
   E. A 20-year retirement program with a monthly pension of 40% of your total salary (equivalent to approximately 50% of your base pay)
   F. Permanent relocation every four years or less
   G. Recognition of your achievements and accomplishments by your organization
   H. Effective use of your abilities and training by your organization
   I. Extended separation from your immediate family (if married) or home and friends (if unmarried)
   J. A favorable attitude on the part of your spouse (if married) or immediate family (if unmarried) regarding your career
   K. A requirement to attain positions of increased rank and responsibility in order to remain a member of your organization

3. Which one of the following shows how much of the time you feel satisfied with your job?

   A. All the time
   B. Most of the time
   C. A good deal of the time
   D. About half of the time
   E. Occasionally
   F. Seldom
   G. Never

4. Choose the one of the following statements which best tells how well you like your job?

A. I hate it
B. I dislike it
C. I don't like it
D. I am indifferent to it
E. I like it
F. I am enthusiastic about it
G. I love it

5. Which one of the following best tells how you feel about changing your job?

A. I would quit this job at once if I could.
B. I would take almost any other job in which I could earn as much as I am earning now.
C. I would like to change both my job and my occupation.
D. I would like to exchange my present job to another one.
E. I am not eager to change my job, but I would do so if I could get a better job.
F. I cannot think of any jobs for which I would exchange.
G. I would not exchange my job for another one.

6. Which one of the following shows how you think you compare with other people?

A. No one likes his job better than I like mine.
B. I like my job much better than most people like theirs.
C. I like my job better than most people like theirs.
D. I like my job about as well as most people like theirs.
E. I dislike my job more than most people dislike theirs.
F. I dislike my job much more than most people dislike theirs.
G. No one dislikes his job more than I dislike mine.

7. Which one of the following best describes your attitude toward making the Air Force a career?

A. Definitely intend to make the Air Force a career.
B. Probably will make the Air Force a career
C. Leaning toward making the Air Force a career
D. Undecided
E. Leaning toward not making the Air Force a career
F. Probably will not make the Air Force a career
G. Definitely do not intend to make the Air Force a career

8. How often do you think about quitting the Air Force?

0	1	2	3	4
Never				Constantly

9. Have you participated in job interviews with civilian employers in the last year?

A. Yes B. No

10. Have you ever applied for a Date of Separation (DOS) in order to separate from the Air Force prior to the 20-year retirement point?

A. Have never applied for a DOS
B. Have applied for but not received a DOS
C. Currently have applied for and received a DOS

11. To what extent does your spouse (if married) or immediate family (if unmarried) expect (want) you to make a career of the Air Force?

-5	-4	-3	-2	-1	0	1	2	3	4	5
VERY LITTLE					INDIFFERENT					VERY MUCH

12. How important are the expectations of your spouse (if married) or immediate family (if unmarried) in determining your career decision?

-5	-4	-3	-2	-1	0	1	2	3	4	5
VERY LITTLE					INDIFFERENT					VERY MUCH

- PART VII -

The following statements are designed to find out the way certain, important events in our society affect different people. Each items consists of a pair of alternatives lettered A or B. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you are concerned. In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one statement you more strongly believe. Please answer these items carefully, but do not spend too much time on any one item. Also, try to respond to each item independently when making your choice; do not be influenced by your previous choices.

1. A. Many of the unhappy things in people's lives are partly due to bad luck.
   B. People's misfortunes result from the mistakes they make.

2. A. In the long run people get the respect they deserve in this world.
   B. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

3. A. Without the right breaks one cannot be an effective leader.
   B. Capable people who fail to become leaders have not taken advantage of their opportunities.

4. A. No matter how hard you try some people just don't like you.
   B. People who can't get others to like them don't understand how to get along with others.

5. A. I have often found that what is going to happen will happen.
   B. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

6. A. Becoming a success is a matter of hard work; luck has little or nothing to do with it.
   B. Getting a good job depends mainly on being in the right place at the right time.

7. A. When I make plans, I am almost certain that I can make them work.
   B. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

8. A. In my case getting what I want has little or nothing to do with luck.
   B. Many times we might just as well decide what to do by flipping a coin.

9. A. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
   B. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.

10. A. Most people don't realize the extent to which their lives are controlled by accidental happenings.
    B. There really is no such thing as "luck."

11. A. It is hard to know whether or not a person really likes you.
    B. How many friends you have depends upon how nice a person you are.

12. A. In the long run the bad things that happen to us are balanced by the good ones.
    B. Most misfortunes are the result of lack of ability, ignorance, laziness or all three.

13. A. Many times I feel that I have little influence over the things that happen to me.
    B. It is impossible for me to believe that chance or luck plays an important role in my life.

14. A. People are lonely because they don't try to be friendly.
    B. There's not much use in trying hard to please people; if they like you, they like you.

15. A. What happens to me is my own doing.
    B. Sometimes I feel that I don't have enough control over the direction my life is taking.

Please place the completed questionnaire in the attached envelope and return it to your CGOC representative or drop it in the mail as soon as possible. Thank you for your time and effort.

COMMENTS:

APPENDIX D

Participating Bases

List of

Bases Represented in Survey

Andrews AFB, Maryland

Arnold AFS, Tennessee

Brooks AFB, Texas

Contract Management Division (various Defense Contractor locations)

Edwards AFB, California

Eglin AFB, Florida

Hanscom AFB, Massachusetts

Kirtland AFB, New Mexico

Los Angeles AFS, California

Norton AFB, California

Patrick AFB, Florida

Rome ADC, New York

Sunnyvale AFS, California

Vandenberg AFB, California

Wright-Patterson AFB, Ohio

APPENDIX E

Descriptive Statistics

TABLE XXI

Descriptive Statistics

Demographic and Response Group	Absolute Frequency	Relative Percentage	Adjusted Percentage
Grade			
2Lt	577	27.4	27.5
1Lt	308	14.6	14.7
Capt	1215	57.8	57.9
Total Commissioned Service - years (TAFCS)			
1	441	21.0	21.0
2	250	11.9	11.9
3	207	9.8	9.9
4	116	5.5	5.5
5	115	5.5	5.5
6	118	5.6	5.6
7	124	5.9	5.9
8	150	7.1	7.2
9	147	7.0	7.0
10	176	8.4	8.4
11	169	8.0	8.1
12	74	3.5	3.5
13	8	.4	.4
14	1	0	0
15	1	0	0
Prior Enlisted Service			
Yes	549	26.1	26.6
No	1549	73.7	73.8
Total Enlisted Service (years)			
0	1549	73.7	74.0
1	40	1.9	1.9
2	48	2.3	2.3
3	43	2.0	2.1
4	90	4.3	4.3
5	51	2.4	2.4
6	38	1.8	1.8
7	34	1.6	1.6
8	39	1.9	1.9
9	25	1.2	1.2
10	34	1.6	1.9

TABLE XXI continued

Demographic and Response Group	Absolute Frequency	Relative Percentage	Adjusted Percentage
Total Enlisted Service- years (continued)			
11	20	1.0	1.0
12	34	1.6	1.6
13	20	1.0	1.0
14	11	.5	.5
15	7	.3	.3
16	8	.4	.4
17	2	.1	.1
18	0	0	0
19	0	0	0
20	1	0	.0
Service Commitment			
No Commitment	534	25.4	25.4
Less Than 1 Year	249	11.8	11.9
1 to 2 Years	351	16.7	16.7
2 to 3 Years	376	17.9	17.9
Greater than 3 Yrs	589	28.0	28.1
Break In Service			
Returned to Active Duty	162	7.7	7.7
No Separation	1937	92.1	92.3
Education			
Baccalaurate	509	24.2	24.3
Bacc. & Graduate	523	24.9	25.0
Masters	721	34.3	34.5
Masters & Post Grad	195	9.3	9.3
Doctorate	143	6.8	6.8
Commission Source			
ROTC	960	45.6	49.3
Military Academy	232	11.0	11.0
OTS	756	35.9	38.8
Sex			
Female	167	7.9	8.0
Male	1932	91.9	92.0

TABLE XXI continued

Demographic and Response Group	Absolute Frequency	Relative Percentage	Adjusted Percentage
Duty AFSC			
Pilot/Navigator	25	1.2	1.2
Scientist	141	6.7	6.7
Program Manager	260	12.4	12.4
Development Engineer	788	37.5	37.7
Computer Specialist	123	5.8	5.9
Civil Engineer	22	1.0	1.1
Procurement	184	8.7	8.8
Other	549	26.1	26.2
Career Status			
Regular	838	39.8	40.2
Career Reserve	548	26.1	26.3
Reserve	697	33.1	33.5
Marital Status			
Married	1514	72.0	72.3
Unmarried	581	27.6	27.7
Career Intent			
Definite Career	511	24.3	24.3
Probable Career	442	21.0	21.0
Possible Career	299	14.2	14.2
Undecided	289	13.7	13.8
Possible Separation	199	9.5	9.5
Probable Separation	204	9.7	9.7
Definite Separation	157	7.5	7.5

	Mean	Standard Deviation	Range
Indices			
HOPP	19.06	3.99	4 - 28
ROTTER	4.79	2.99	0 - 15
SVINDX	9.16	4.48	1 - 27

APPENDIX F

Comparison of Sample and Population Demographics

TABLE XXII

Comparison of Sample Demographics

With Total Population

Demographic	Percentage of Sample	Percentage of Total Population
AFSC		
10xx - 15xx	1.2	5.4
26xx	6.7	10.6
27xx	12.4	11.4
28xx	37.7	44.0
65xx	8.8	7.6
Other	33.3	20.9
Career Status		
Regular	40.2	44
Reserve	59.8	56
Sex		
Male	92	96.2
Female	8	3.8
Education		
Baccalaureate	49.3	49.7
Masters	43.8	47.8
Doctorate	6.8	2.4
Rank		
Lt	42.1	33.6
Capt	57.9	66.4

Note: n = 2103; N = 4350

APPENDIX G

Definitions

Definitions

AFLNG -- variable representing the Air Force long-range expectancy term. Captured by item 1, Part V.

AFSC -- Air Force Systems Command or Air Force Speciality Code

AFSRT -- variable representing the Air Force short-range expectancy term. Captured by item 3, Part V.

BST5TOTV -- the total valence term generated using Eq (3), no expectancy term, and the five most important outcomes as determined by the survey respondents

BST8TOTV -- the total valence term generated using Eq (3), no expectancy term, and the eight most important outcomes as determined by the survey respondents

CAREER INTENT -- the self-reported career intent of each of the respondents. Captured by item 7, Part VI.

CGOC -- Company Grade Officers Council

CIVILIAN JOB INTERVIEW -- variable used to record whether the respondent had participated in civilian job interviews in the last year

CVLNG -- variable representing the civilian long-range expectancy term. Captured by item 2, Part V.

CVSRT -- variable representing the civilian short-range expectancy term. Captured by item 4, Part V.

DATE OF SEPARATION -- variable used to record whether the respondent had established a Date of Separation

GTOTALV -- the total valence term generated using Eq (3), no expectancy term and all of the instrumentality-valence products except those terms which contained the spouse/ family opinion outcome (outcome #10)

HOPP -- the Hoppock job satisfaction index, calculated using the sum of the responses of items 3,4,5,6 or Part VI.

IV PRODUCT -- instrumentality-valence product. The quantity calculated by multiplying the valence of an outcome by the instrumentality (either Air Force or civilian) for that outcome

OTS -- Officers Training School

REFOTH1 -- referred to as the family opinion term, this quantity was designed to measure the force exerted on the individual by a spouse's or family's expectations. This quantity is the product of item 10, Part II and item 11, Part VI.

ROTC -- Reserve Officer Training Corps

ROTTER - the Rotter index calculated by summing the number of external responses provided by a given individual (Part VII)

SVINDX -- service index. A variable used in the "golden handcuffs" calculation. This variable is the sum of an individual's enlisted and officer service and any incurred commitment.

TAFCS -- Total Active Federal Commissioned Service. The amount of time an individual has served as a USAF commissioned officer.

TAFS -- Total Active Federal Service. The amount of time an individual has served in the USAF. The sum of officer and enlisted service

THINKING OF SEPARATION -- variable used to record the frequency which the individual thinks of leaving the USAF

TOTALFL -- the Total Force term generated using Eq (3), long range expectancy terms and all 11 outcomes

TOTALFS -- the Total Force term generated using Eq (3), short range expectancy terms and all 11 outcomes

TOTALV -- the Total Valence term generated using Eq (3), no expectancy terms and all 11 outcomes

APPENDIX H

Across-Person Data

TABLE XXIII

Sub-Sample Regression/Correlation Values
of CAREER INTENT With Air Force IV Products

Variable	F to Enter	Multiple R	Simple r
TAFCS - 1 (n = 411)			
DSPLN	68.28	.38	.38
FAMLY	43.42	.47	.37
JBCHL	26.29	.52	.36
HISAL	14.38	.55	.28
RETIR	9.72	.56	.28
RELOC	9.55	.57	.29
RECOG	2.42	.58	.21
UPROT	1.93	.58	.17
UTLIZ	.91	.58	.30
PRMOT	.21	.58	.23
SPRTN	.03	.58	.05
TAFCS - 2 (n = 226)			
FAMLY	56.66	.45	.45
JBCHL	27.26	.54	.43
DSPLN	16.36	.58	.37
RELOC	8.47	.60	.32
UTLIZ	2.98	.61	.36
RETIR	1.92	.61	.22
SPRTN	.09	.61	.09
PRMOT	.05	.61	.17
HISAL	.05	.61	.20
TAFCS - 3 (n = 194)			
FAMLY	53.91	.47	.47
JBCHL	23.29	.55	.44
DSPLN	16.67	.60	.41
RELOC	9.35	.62	.40
UTLIZ	4.80	.64	.41
SPRTN	3.31	.64	.08
UPROT	1.88	.65	.13
PRMOT	1.93	.65	.34
HISAL	.56	.65	.30
RETIR	.37	.66	.17
RECOG	.08	.66	.27

Note: Variable names defined in Table XIX
Determination of the number of variables to be included in each regression in this Appendix was made using the SPSS default option, F = .01 (Nie et al., 1975, p. 346).

Variable	F to Enter	Multiple R	Simple r
TAFCS - 4 (n = 112)			
PRMOT	24.89	.43	.43
FAMLY	14.23	.53	.36
JBCHL	8.80	.58	.39
RELOC	2.54	.59	.26
RECOG	1.52	.60	.34
DSPLN	.59	.60	.20
HISAL	.44	.60	.25
SPRTN	.32	.60	-.02
UPROT	.27	.61	.12
UTLIZ	.10	.61	.35
RETIR	.06	.61	.25
TAFCS - 5 (n = 102)			
JBCHL	24.17	.44	.44
RECOG	12.27	.53	.42
FAMLY	7.13	.58	.37
RETIR	6.78	.61	.32
SPRTN	3.53	.63	.26
HISAL	1.63	.64	.26
DSPLN	.65	.64	.22
PRMOT	.15	.64	.40
UTLIZ	.06	.64	.37
UPROT	.06	.64	.29
TAFCS - 6 (n = 109)			
FAMLY	23.64	.42	.42
RELOC	9.80	.50	.34
PRMOT	5.56	.54	.32
RETIR	2.63	.55	.24
HISAL	1.37	.56	.08
SPRTN	.60	.56	.10
JBCHL	.48	.57	.33
UPROT	.25	.57	.19
DSPLN	.06	.57	.14
UTLIZ	.01	.57	.25

Variable	F to Enter	Multiple R	Simple r
TAFCS - 7 (n = 101)			
UTLIZ	30.46	.48	.48
FAMLY	12.02	.56	.42
DSPLN	5.16	.59	.45
JBCHL	4.12	.62	.42
HISAL	.97	.62	.35
PRMOT	.61	.62	.44
UPROT	.28	.63	.12
RETIR	.20	.63	.16
RECOG	.13	.63	.33
TAFCS - 8 (n = 129)			
UTLIZ	36.69	.47	.47
DSPLN	10.54	.53	.37
RELOC	4.75	.56	.29
FAMLY	3.23	.57	.29
HISAL	1.40	.58	.05
JBCHL	1.08	.58	.38
RECOG	.70	.59	.30
SPRTN	.41	.59	.18
RETIR	.45	.59	.24
PRMOT	.40	.59	.24
UPROT	.03	.59	.17
TAFCS - 9 (n = 123)			
UTLIZ	14.63	.33	.32
DSPLN	5.38	.38	.24
RETIR	3.22	.41	.23
HISAL	2.43	.43	.25
PRMOT	1.25	.44	.25
SPRTN	.98	.45	.16
JBCHL	.62	.45	.17
RELOC	.56	.46	.21
FAMLY	.66	.46	.18
RECOG	.79	.47	.24
UPROT	.02	.47	.15

Variable	F to Enter	Multiple R	Simple r
TAFCS - 10 (n = 161)			
UTLIZ	15.73	.30	.30
FAMLY	8.88	.37	.30
DSPLN	5.26	.41	.29
PRMOT	2.35	.42	.29
HISAL	1.02	.43	.22
RECOG	.77	.43	.24
RETIR	.52	.44	.16
UPROT	.34	.44	.12
SPRTN	.29	.44	.09
JBCHL	.10	.44	.17
RELOC	.04	.44	.16
TAFCS - 11 (n = 156)			
UTLIZ	46.68	.48	.48
JBCHL	11.38	.53	.45
PRMOT	4.58	.55	.38
FAMLY	3.73	.57	.32
RETIR	4.15	.58	.28
RELOC	1.82	.59	.24
DSPLN	1.05	.59	.29
SPRTN	.26	.60	.05
RECOG	.04	.60	.36
TAFCS - 12 (n = 65)			
FAMLY	18.59	.48	.48
RETIR	9.46	.57	.38
RECOG	4.07	.61	.45
UTLIZ	1.92	.62	.25
JBCHL	3.28	.65	.39
PRMOT	1.97	.66	.42
HISAL	1.38	.67	.07
RELOC	.84	.68	.28
DSPLN	1.51	.69	.22
UPROT	.15	.69	.11
SPRTN	.09	.69	.24

Variable	F to Enter	Multiple R	Simple r
AFSC - 10xx to 15xx (Pilot/Navigator) (n = 24)			
UTLIZ	11.09	.58	.58
DSPLN	4.14	.67	.49
RELOC	2.17	.70	.57
PRMOT	.57	.72	-.02
UPROT	.29	.72	.29
RECOG	.13	.72	.38
JBCHL	.14	.73	.42
HISAL	.13	.73	.33
RETIR	.04	.73	.04
SPRTN	.01	.73	.14
AFSC - 26xx (Scientist) (n = 131)			
JBCHL	28.26	.42	.42
RETIR	11.33	.50	.37
DSPLN	9.44	.55	.30
RELOC	5.55	.57	.36
UPROT	5.75	.60	-.02
FAMLY	2.48	.61	.31
HISAL	2.01	.62	.11
RECOG	.63	.62	.30
UTLIZ	.29	.62	.29
PRMOT	.31	.62	.27
SPRTN	.09	.62	.07
AFSC - 27xx (Program Manager) (n = 244)			
FAMLY	48.45	.41	.41
UTLIZ	24.51	.49	.38
RETIR	5.92	.51	.20
PRMOT	4.95	.53	.32
UPROT	4.84	.54	.03
HISAL	4.36	.55	.27
JBCHL	3.81	.56	.38
DSPLN	2.54	.57	.26
RELOC	1.73	.57	.21
SPRTN	.09	.57	.08
RECOG	.03	.57	.29

Variable	F to Enter	Multiple R	Simple r
AFSC - 28xx (Development Engineer) (n = 730)			
UTLIZ	107.27	.36	.36
FAMLY	44.88	.42	.31
JBCHL	24.13	.45	.34
RELOC	21.00	.48	.27
DSPLN	11.74	.49	.28
RETIR	7.60	.50	.21
PRMOT	3.54	.50	.28
UPROT	2.39	.50	.10
SPRTN	.88	.50	.07
RECOG	.54	.50	.22
HISAL	.50	.51	.15
AFSC - 51xx (Computer Specialist) (n = 106)			
FAMLY	20.57	.41	.41
DSPLN	11.32	.50	.35
UTLIZ	10.84	.56	.35
RETIR	4.69	.59	.32
RECOG	2.37	.60	.14
JBCHL	2.01	.61	.33
RELOC	1.84	.62	.24
PRMOT	.98	.63	.36
UPROT	.29	.63	.16
SPRTN	.27	.63	.27
AFSC - 55xx (Civil Engineer) (n = 19)			
JBCHL	9.87	.61	.60
DSPLN	8.71	.77	.58
RECOG	6.97	.85	.17
UTLIZ	4.15	.88	.49
RETIR	2.53	.90	.31
FAMLY	1.80	.92	.56
HISAL	1.21	.93	.54
PRMOT	1.10	.93	-.02
UPROT	.76	.94	.00
RELOC	.28	.94	.38
SPRTN	.06	.94	-.01

Variable	F to Enter	Multiple R	Simple r
AFSC - 65xx (Procurement) (n = 164)			
JBCHL	27.46	.38	.38
DSPLN	12.20	.45	.29
RETIR	7.38	.49	.25
RELOC	8.03	.53	.26
RECOG	4.32	.54	.30
PRMOT	.97	.55	.33
FAMLY	.44	.55	.25
UPROT	.07	.55	.13
UTLIZ	.08	.55	.26
MEDICAL DOCTOR			
FAMLY	136.90	.47	.47
JBCHL	49.64	.55	.43
DSPLN	16.75	.57	.32
UTLIZ	8.47	.58	.38
RETIR	5.23	.58	.26
PRMOT	1.18	.59	.33
UPROT	.97	.59	.14
HISAL	.09	.59	.24
SPRTN	.03	.59	.01
OTHER			
FAMLY	17.08	.52	.52
RECOG	6.52	.60	.24
PRMOT	1.52	.61	.40
DSPLN	.94	.62	.14
UTLIZ	1.11	.64	.36
RELOC	.63	.64	-.03
HISAL	.19	.65	.16
SPRTN	.03	.65	-.04
UPROT	.03	.65	.12

Variable	F to Enter	Multiple R	Simple r
Career Status - Regular (n = 750)			
UTLIZ	105.35	.35	.35
FAMLY	40.01	.42	.31
DSPLN	26.83	.45	.28
RETIR	22.95	.48	.24
JBCHL	14.22	.49	.32
RELOC	14.38	.50	.25
PRMOT	2.98	.51	.29
UPROT	1.58	.51	.13
HISAL	.77	.51	.18
SPRTN	.29	.51	.12
RECOG	.20	.51	.27
Career Status - Career Reserve (n = 486)			
FAMLY	115.64	.44	.44
UTLIZ	39.20	.50	.37
PRMOT	15.24	.52	.35
JBCHL	11.64	.54	.36
RETIR	9.55	.55	.28
DSPLN	5.64	.56	.30
RECOG	.45	.56	.32
HISAL	.28	.56	.24
SPRTN	.22	.56	.02
RELOC	.29	.56	.17
UPROT	.05	.56	.13
Career Status - Reserve (n = 648)			
JBCHL	173.36	.46	.46
RELOC	52.62	.52	.33
FAMLY	32.11	.55	.38
DSPLN	21.25	.57	.33
HISAL	9.21	.58	.24
RETIR	4.70	.58	.20
UPROT	3.25	.59	.14
UTLIZ	3.34	.59	.34
PRMOT	1.20	.59	.26
RECOG	.57	.59	.23
SPRTN	.33	.59	.06

Variable	F to Enter	Multiple R	Simple r
Marital Status - Married (n = 1339)			
JBCHL	250.92	.40	.40
FAMLY	139.82	.49	.39
UTLIZ	54.62	.52	.38
DSPLN	35.25	.53	.30
RETIR	24.05	.55	.24
RELOC	17.35	.55	.25
PRMOT	9.28	.56	.32
UPROT	3.08	.56	.11
SPRTN	2.16	.56	.05
HISAL	1.57	.56	.21
RECOG	.04	.56	.29
Marital Status - Unmarried (n = 555)			
JBCHL	82.49	.36	.36
DSPLN	39.47	.43	.32
FAMLY	20.49	.46	.29
RELOC	14.39	.49	.25
PRMOT	9.23	.50	.28
RETIR	6.38	.51	.23
HISAL	2.69	.51	.20
RECOG	2.49	.51	.18
UPROT	1.63	.52	.14
SPRTN	1.59	.52	.11
UTLIZ	.88	.52	.29
Sex - Female (n = 153)			
JBCHL	23.72	.37	.37
FAMLY	11.70	.44	.35
RELOC	6.23	.48	.29
UTLIZ	3.60	.50	.34
SPRTN	2.02	.51	.19
RECOG	1.31	.51	.22
DSPLN	1.18	.52	.26
PRMOT	.77	.52	.17
HISAL	.45	.53	.15
UPROT	.15	.53	.23
RETIR	.04	.53	.17

Variable	F to Enter	Multiple R	Simple r
Sex - Male (n = 1745)			
JBCHL	302.49	.38	.38
FAMLY	162.90	.47	.37
DSPLN	74.68	.50	.31
RETIR	44.96	.52	.25
UTLIZ	30.03	.53	.36
RELOC	22.99	.54	.24
PRMOT	14.55	.55	.31
UPROT	7.92	.55	.10
HISAL	4.02	.55	.21
SPRTN	2.21	.55	.04
RECOG	.24	.55	.26

APPENDIX I

Variable Intercorrelations

TABLE XXIV

Air Force IV Product Intercorrelations

Variable	r									
	HISAL	PRMOT	JBCHL	DSPLN	RETIR	RELOC	RECOG	UTLIZ	SPRTN	FAMLY	UPROT
HISAL	1.000										
PRMOT	.327	1.000									
JBCHL	.138	.356	1.000								
DSPLN	.200	.220	.195	1.000							
RETIR	.169	.236	.206	.110	1.000						
RELOC	.172	.125	.153	.235	.086	1.000					
RECOG	.238	.510	.336	.221	.211	.147	1.000				
UTLIZ	.300	.482	.478	.267	.245	.209	.553	1.000			
SPRTN	.038	.058	.031	.142	-.011	.299	.024	.065	1.000		
FAMLY	.170	.226	.300	.282	.148	.230	.237	.275	.080	1.000	
UPROT	.140	.219	.124	.283	.128	.164	.177	.226	.141	.162	1.000

Note: Sample size for intercorrelations ranges from 1921 to 1932

TABLE XXV

Mobley Model Component Intercorrelations

Variable	r		
	GTOTALV	REFOTH1	HOPP
GTOTALV	1.000		
REFOTH1	.371	1.000	
HOPP	.309	.196	1.000
Note: Sample size = 1851			

Vita

Richard J. Mosbach was born 31 May 1945 in Laurens, Iowa, where he graduated from high school in 1963. He attended the United States Air Force Academy, from which he received a Bachelor of Science degree and an Air Force commission in 1968.

Following graduation, Major Mosbach served in a variety of assignments in support of NORAD's space surveillance mission. These included duty at Clear AFS, Alaska and the NORAD Cheyenne Mountain Complex. Following this, Major Mosbach was assigned to the Office of the Secretary of the Air Force - Special Projects at Sunnyvale AFS, California. He entered the Air Force Institute of Technology School of Engineering in 1978.

Major Mosbach is married to the former Beth Miller of Brighton, Colorado.

Permanent Address: 332 S. 1st Street
Laurens, Iowa 50554

Vita

Thomas J. Scanlan Jr. was born on 24 March 1946 in Albany, Georgia. He completed high school in 1964, and graduated from the University of New Mexico in January 1969 with a Bachelor of Science in Mechanical Engineering. Upon graduation, he was commissioned as Second Lieutenant in the United States Air Force through ROTC.

His initial assignment was as an orbital analyst at Hill Air Force Base, Utah. He has also served as a space object identification analyst at the SPACETRACK sensor in Diyarbakir, Turkey and in numerous computer acquisition and management positions at the Air Force Satellite Control Facility.

He entered the Air Force Institute of Technology as a graduate student in Systems Management in August 1978.

Captain Scanlan is married to the former Sharon Hamilton of Tallahassee, Florida, and they have one son, Christopher.

Permanent Address: 4804 Summer NE
Albuquerque, NM 87110

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Retention	Referrent Others
Career Intent	Anticipated Attraction

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

The general purpose of this study was to identify and analyze the individual perceptions and attitudes which affect the career selection decision of Air Force Systems Command company grade officers. Building on a model previously developed by Logan M. Lewis using Victor Vroom's (1964) Expectancy Theory, this research included a literature review of recent work in the area of career turnover. The review identified two major theoretical

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developments which were postulated to add significant predictive power to Lewis' approach:

1) The effect of a person's motivation to comply with the expectations of others
2) The effect of a person's current job satisfaction

The specific purpose of this thesis was to operationalize the aforementioned concepts in a single model which explained the most variance in individual career intentions. This was accomplished in the form of a survey which was completed by 2200 company grade officers throughout Systems Command.

The results of the data analyses showed that a model which addressed not only the perceived attraction of job alternatives, but also the effects of the expectations of others, and current job satisfaction more accurately described an individual's career selection decision. Additional analysis of the different factors identified as being associated with career decisions indicated:

1) Family opinion, particularly that of the spouse, is of major importance to the career selection decision, especially during the first six years of an individual's career.
2) Job challenge is particularly important to officers from commissioning to about five years. At this point, utilization of training and abilities becomes the dominant factor.
3) Enforcement of standards has a strong negative association during the years immediately preceding career decision points prior to promotion to Captain and promotion to Major.
4) High salary and the 20-year retirement were not particularly significant, but the concern expressed by the majority of respondents who made comments indicated this could change depending on Presidential and Congressional actions in these areas.
5) The "up or out" policy had no practical association with career decisions of the total sample.

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